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THE TECHNIC OF SUSPENSION IN BRONCHOSCOPY AND ESOPHAGOSCOPY.*

DR. ROBERT CLYDE LYNCH, New Orleans, La.

In my earlier writings and correspondence with my colleagues, I have stated that the use of suspension was not an essential in bronchoscopy or esophagoscopy. I am still of this opinion as regards adult subjects, where the reason for the use of the tubes is not a foreign body impacted in the larynx or just behind the cricoid in the esophagus. In these instances, suspension will facilitate the removal of such a foreign body better than the spatula or the tubes alone. But in children and infants, I have been using the suspension for the purpose of the introduction and manipulation of the tubes with such satisfaction that I feel now that it is becoming a very essential factor in this class of work.

Firstly, infants and young children are the most ideal subjects for suspension because of their natural muscular undevelopment, their flexible necks and because of the short distance from the upper teeth to the larynx.

Secondly, it is in infants and young children that the greater percentage of our foreign body cases occur and it is in these also that we fear most the reactive inflammations and swellings due to our manipulations.

*Read at the Seventh Annual Session of the Clinical Congress of Surgeons, Philadelphia, October 25, 1916.

It is your experience on occasions, as it has been mine, to remove the foreign body successfully with the bronchoscope, only to be called again to relieve the subglottic edema by a tracheotomy, a most disheartening circumstance.

It is the opinion of the continental Europeans that peroral endoscopy is not practical in infants and young children up to four years of age and that tracheotomy should be done in these cases. One has but to see Jackson at work or to read the American liter-

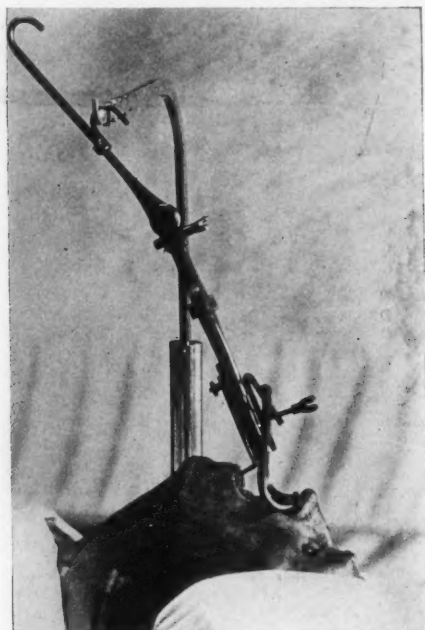


Fig. 1. New position for introduction of bronchoscopy in children and infants.

ature to be convinced to the contrary, that peroral endoscopy is the procedure of election in infants and young children, providing one has developed that technique which will permit the passing of the tube through the glottis with the least amount of traumatism, and suspension aids this to the greatest degree.

I also agree most heartily with Jackson in his postulate: no anesthesia in young children and never in infants. If there is one real

contraindication to general anesthesia, it would be in the case of a baby with insufflated foreign body which is producing some dyspnea.

For bronchoscopy in infants and young children, the head of the table is not dropped as for the regular technique, it being more convenient to have the table flat. Just sufficient extension by moving the horizontal crane outwards is made to bring the posterior two-thirds of the larynx into view; then the neck is straightened by the

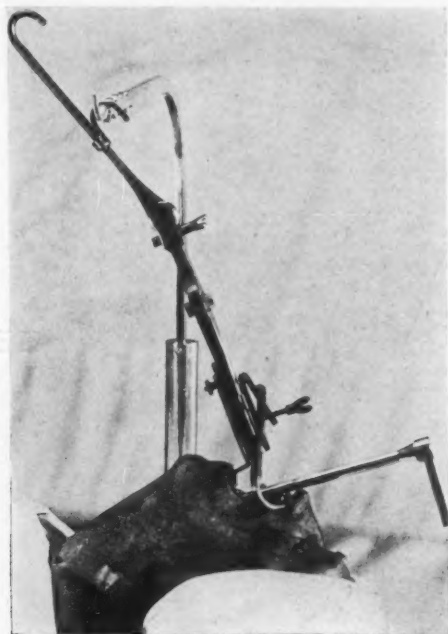


Fig. 2. Introduction of bronchoscope under direct view, protecting all parts from traumatism.

elevation of the traveling crane and we have the posterior two-thirds of the larynx well in view, in many instances with the child's head hardly elevated from the table.

The child patient is prepared by being wrapped firmly in a sheet and the crane so adjusted that we may procure flexion of the head rather than extension, for you will remember that we are not anxious to see the anterior commissure now, but to gain sufficient room

for the passage of the tube. One can use a short spatula and follow along the base of the tongue using the tube to elevate the epiglottis, though I much prefer to so introduce the spatula that it picks up the laryngeal face of the epiglottis and brings into view the interior of the larynx. A solution of five per cent cocain is now applied to the upper part of the larynx only, being sure that the trachea receives none of the anesthetic fluid on account of the possibilities of dimin-

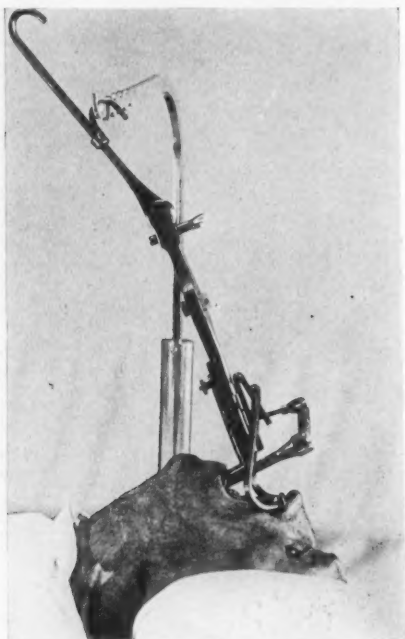


Fig. 3. Bronchoscope in right bronchus showing slight difference in plane scope and instrument.

ishing the cough reflex, nature's only method of ridding the bronchial tree of excessive secretions. The surface of the larynx and vocal cords are next covered with sterile vaseline, to permit the easy passage of the tube.

With the larynx thus before you, prepared in a surgical way for the passage of a tube or any other instrument, it is an easy matter to slip the bronchoscope or esophagoscope into their respective openings without, in the least manner, traumatizing the part.

In infants and young children, one will usually inspect the parts first and in some instances remove the foreign body without other aid. May I report briefly the two following cases to illustrate?

Case 1. Baby, fourteen months old, undersized, under weight, somewhat pale, no dyspnea, but typical foreign body cough. History of insufflation of watermelon seed four weeks ago. Three previous attempts were made at removal by men in an adjoining State. The

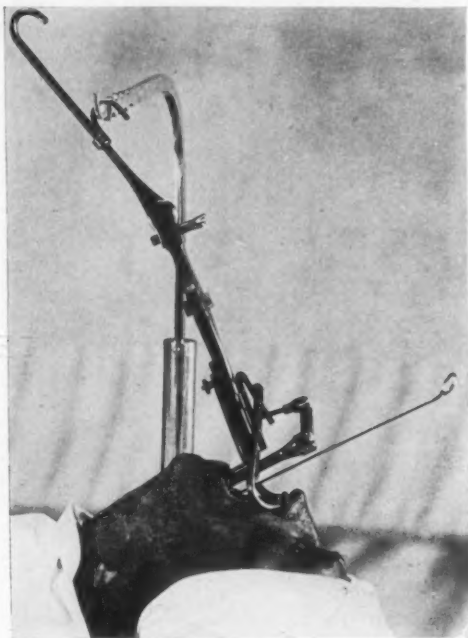


Fig. 4. Bronchoscope in right bronchus; applicator in esophagus.

child was suspended; the seed was seen to be loose in the trachea, elevators were slipped in between the cords to separate them and the child made to cough, when the seed flew out of the mouth. In this instance no tube or other instrument entered below the cords. The child was so well it was returned home the same night.

Case 2. Baby, eleven months old. Insufflated particles of peanut; suspension. Cords separated; mass could be seen in right bronchus, using ordinary head mirror with 100 watt nitrogen lamp

for illumination. Forceps were passed down the trachea and a large peanut mass removed. Several smaller pieces were seen on the tracheal wall and deep in the right bronchus. Those on the tracheal wall were removed with the suction tube and that deep in the bronchus, in the same manner but through a bronchoscope.

These will serve to indicate that suspension has rather a special field of its own in foreign body removals in infants and young chil-



Fig. 5. Dismantling hook. Later tilted to patient's right to remove left tooth plate.

dren and would precede the use of the tubes which again is in the natural order of application.

The selection and passage of the bronchoscope is the next step. One has his special preferences in the matter of bronchoscopes, my preference being for the Killian baby set, which to me have these advantages: They are equipped with a hollow, smooth manderin, the blunt, round surface of which will produce no traumatism at all. They give the largest working lumen and can be illuminated with a

Brünnings handle, a Keirstein lamp or, as I frequently do, I use an ordinary head mirror with the strong nitrogen lamp. Grease the tube well, grease the larynx and cords well, separate the cords by the use of an elevator or retractor and pass the tube into the trachea under direct vision without its coming into contact with the subglottic space. Once the tube is passed the vocal cords, the mandarin is removed to establish respiration through the tube, then we may proceed along two general plans. If it is probable that the tube will have to be removed and be reintroduced, as in the case of multiple foreign bodies, it will be best to continue the patient in suspension.

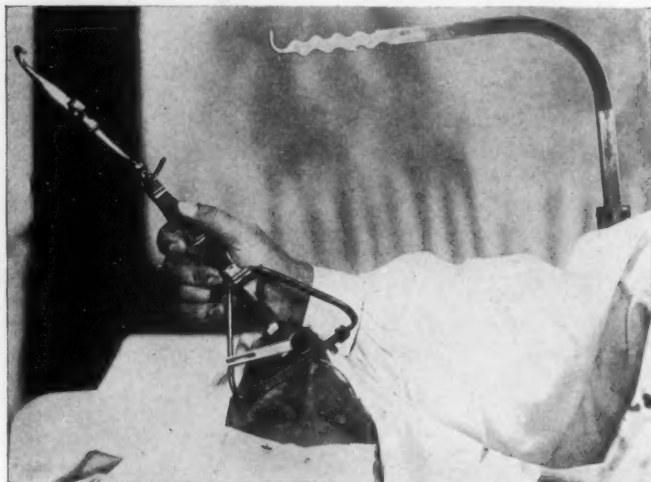


Fig. 6. Hook tilted to left to remove right tooth plate.

By guiding the bronchoscope through the lumen, one will find that it is necessary to flex the head, which can be done by the horizontal movement of the crane and the worm gear joint; one is free to move the scope laterally because of the extra width of the pear-shaped ring. It might be said that the distal end of the tube may be raised or lowered by the vertical movement of the crane. It gives one the impression of adjusting a cannon for fire; one sights through the tube to the normal lumen and path of the bronchus and by moving the traveling crane in its various directions he so aims the tube as to permit its accurate passage through the bronchus.

It might be said that with the child firmly fixed upon the suspension apparatus, it is much less likely to wriggle loose than ordinarily held. One can handle the bronchoscope with much more delicacy by this means than ordinarily; this applies especially to the region of the stem bronchi.

In one of my peanut cases, portions of the hull of the peanut were also inspired and there were three pieces too large to come



Fig. 7. Elevation of ring out of way of scope.

through the tube. With the suspension apparatus I had no hesitation in withdrawing foreign body and tube because I felt no discomfort about the reintroduction. One does not relish the idea of reintroducing the tube in a baby eleven months old.

With suspension, one feels a certain sense of security about respiratory disturbances and that if the tube is withdrawn, it can easily and quickly be reintroduced and if for any reason a tracheotomy

should be necessary the patient is in the most ideal position for its quick performance.

If you prefer to use the tube unaided after its passage through the cords, you proceed as follows: The baby tube with the mandarin removed is resting in the trachea and respiration is quiet through the tube. The hook is removed from the crane and carefully tilted to the right to permit the removal of the left tooth plate; then the right tooth plate is removed in the same manner. The pear-shaped ring

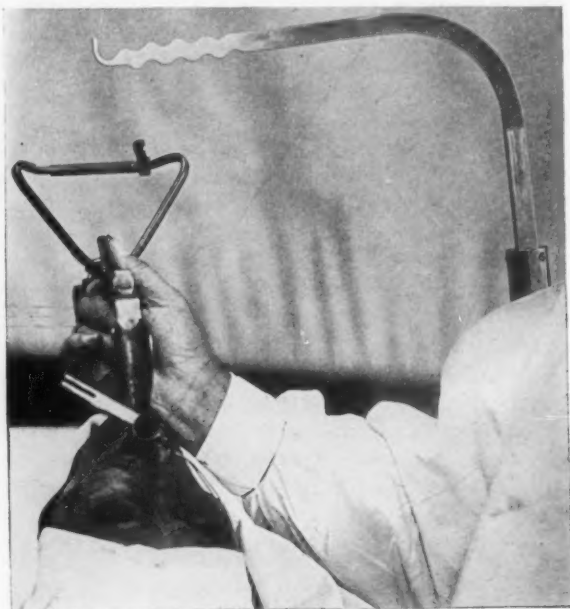


Fig. 8. Removal of spatula.

is bent back upon its hinge and the screw holding the spatula is now loosened and the body of the hook is in this way disengaged from the spatula; finally the spatula is removed. One then attaches his illuminating apparatus and proceeds with his bronchoscopy as is usual.

The introduction of the esophagoscope is such a simple affair under suspension that it seems needless to describe it. The mouth of the esophagus is, in most instances gaping and, an esophagoscope

of suitable size will practically fall in. Its further passage through this passage is better managed, in my opinion, without the suspension apparatus and the latter is dismantled as described above.

In the management of an impacted foreign body either in the larynx or in the mouth of the esophagus, no instrument equals the suspension spatula. In the foreign bodies lying behind the cricoid this cartilage may be lifted to a marked degree and space can be gained by hyper extension of the suspension spatula, that is, by tilting the tip of the spatula by movement of the worm gear and by horizontal movement of the crane. By use of either the speculum for separating the cords or an elevator, one may lift the mucous membrane from an impacted point and with the other hand armed with forceps, remove, turn, twist, rotate or fracture the offending mass and remove it without any damage whatever to the mucous membrane. Safety pins are turned, the points are bent in and the body removed easily. Teeth are cut from a false tooth plate, removed, then the plate is cut in two or seesawed out of the esophagus without tearing the mucous membrane.

I show you a straight pin impacted in the larynx of a boy of seven and a safety pin impacted in the esophagus with the point up, removed by this technique as you see from the bent points of both.

Lastly, with suspension you are permitted to treat your surfaces after removal of the offending body.

For instance, in one of the water melon seed cases the body had produced considerable traumatism with the formation of plastic exudates in three locations in the trachea. This exudate was removed, the surface was painted with tincture of benzoin and vaselin applied to these areas as well as to the mucous membrane of the trachea. In one instance, 25 per cent nitrate of silver was applied to a traumatized spot.

I call your attention to the fact that with the aid of suspension, you are not only able to remove these foreign bodies more easily and with less traumatism, but you are permitted to treat what traumatized surfaces occur and practically bandage your wounds thereafter. Just as our colleagues splint their fractures, plaster their joints and protect their abdominal incisions with gauze and adhesive.

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**PRIMARY CARCINOMA OF THE MIDDLE-EAR;
REPORT OF A CASE.***

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Carcinoma of the middle ear, because of its very rare occurrence and extremely bad prognosis, has not been a favorite topic in medical literature. In view of an ever increasing interest in malignant neoplasms and recognizing the successes in other departments of surgery through early diagnosis and aggressive treatment of cancer, a brief presentation of this infrequently described condition, inspired by the observation of a recent case, is of interest at this time.

Primary carcinoma of the middle ear was long regarded as one of the curiosities of medicine. As early as 1886, Kretschmann¹ collected sixteen cases. In 1899, Zeroni² reported five cases of carcinoma of the ear, of which, however, three were of the external ear or of the canal. His very exhaustive study of the literature yielded one hundred and twenty-one cases of carcinoma of the ear reported between the years 1804 and 1899. Of these a moderate number were primary middle ear carcinomata.

During twenty-four years Bezold³ saw but four cases of carcinoma, three of the external ear, and one primary in the middle ear, out of 20,000 otological patients.

Levesque,⁴ reporting a case in 1910, says that in all the preceding literature he could find less than fifty authenticated cases. He cites Dupau who estimates that there occurs but one case of malignant disease of the middle ear to every 10,000 cases of chronic otorrhea. Milligan⁵, discussing a report of a case by Whitehead, said that in the records of the London Hospital, averaging 200,000 patients per annum for a ten year period, not a single case of carcinoma of the middle ear could be found. For the same period more than thirty cases of malignant disease of the external ear were recorded.

In the literature accessible we have been able to find, since the date of Zeroni's monograph (1899), reports of thirty-four cases of middle ear carcinomata. This includes, however, several mentioned in discussions but not reported *in extenso*.

*Read before the American Academy of Ophthalmology and Oto-Laryngology, at Memphis, Tenn., December, 1916.

American otological literature on this subject is extremely scanty. All told we have found but eight⁶ cases published in the United States.

In order to determine the relative frequency of this disease in America, and the approximate ratio of reported cases to those not reported, we recently sent inquiries to a number of ear specialists throughout the country asking how many proven cases each had seen in his practice or in consultation and how many he had published. Two hundred and forty-seven replies have already been received. One hundred and ninety-two otologists, many of them men of very extensive practice, replied that they had never had a case. Forty-five men returned a total of fifty-one cases, two having each

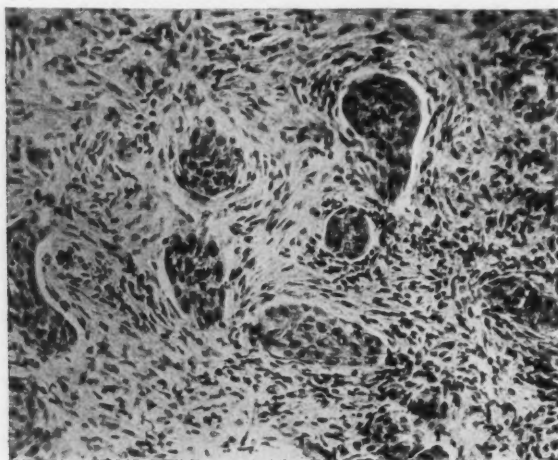


Fig. 1. Hematoxylin and eosin. Photomicrograph of tissue removed by operation. Nests of epithelial cells embedded in dense connective tissue. No epithelial "pearls" are seen. The cells definitely resemble those appearing in the secretions at post-mortem. X 1700.

had five cases.** This fact suggests the possibility of a very uneven geographical distribution of the disease. But two of the forty-five cases had been published.

It is probable that this number represents but a small proportion of all cases which have occurred during the period covered by these observations, many never having come to the attention of a specialist, and many doubtless having died without a correct diagnosis.

While occurring most frequently after the age of forty, Alexander⁷ saw a case in a boy of seventeen, Leidler⁸ reported one aged seventeen, Nager⁹ one at nineteen and Knapp¹⁰ one at twenty.

Both sexes are equally liable to the disease.

Concerning the etiology, the most constant factor which may be regarded as possessing any causal relation is the purulent discharge of a chronic otitis media. This was present in over eighty-five per cent of all cases. Many gave a history of suppuration from infancy or early childhood.

Treitel¹¹ and Danzinger¹² reported cases which appeared without a previous chronic discharge, but followed closely upon an attack of influenza, with only an acute otitis preceding the symptoms of carcinoma.



Fig. 2. Hematoxylin and eosin. Microphotograph of section showing dense hyalinization of the epithelial "pearls" with attempt at inclusion by foreign body giant cells. X 750.

A history of trauma from four weeks to nine months before the onset of symptoms was noted in two cases reported by Milligan^{13,14}, in one reported by Wilkin¹⁵ and in one case reported by Dalby.¹⁶

Heredity plays the same role as in carcinoma of other parts of the body.

Of all symptoms, the most constant and usually the earliest, is pain referred to the meatus or to the post-auricular region. Next in frequency is the presence of bleeding granulations in the middle ear or meatus. Facial paralysis occurs relatively early in most cases. Mastoid tenderness and swelling with a superficial ulceration appear in the more advanced stages.

Impairment of hearing is proportional to the amount of involvement of the cochlea, either by direct extension of the carcinomatous process, or through inflammatory changes. In a few cases [Nager¹⁷

Broeckaert¹⁸] some degree of hearing was present until within a few days of death, as in the case herewith reported. Symptoms on the part of the static labyrinth may appear at any time during the progress of the disease, but they are frequently very late, for the labyrinthine capsule is especially resistant.

Cachexia is a common characteristic in spite of the fact that there is practically never an involvement of organs which have to do with nutrition. This is explained by the disturbances due to the pain and to the poisons produced by the neoplasm itself.

As to the microscopic pathology, it was found that the cases in which the histological findings were given were epitheliomata of

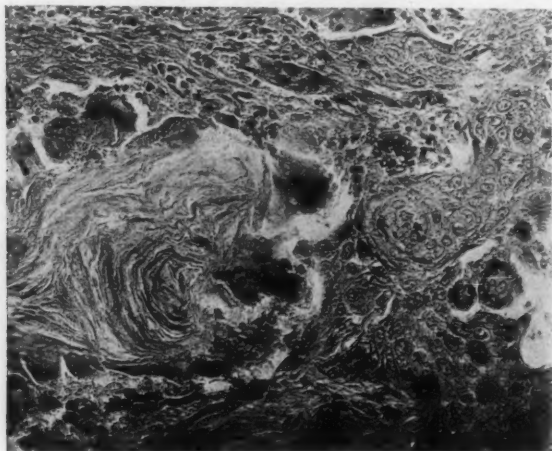


Fig. 3. Hematoxylin and eosin. High power view of same section. X 1700.

the squamous-celled variety. There was one notable exception in a case described by Lange¹⁹ which proved to be a cylindrical-celled epithelioma.

The question as to the method of origin has not been settled. The great majority of middle ear carcinomata can be accounted for by the extension into the tympanic cavity of epithelium from the external canal. In consequence of the traumatism to this epithelial tissue by the chemical irritation of a purulent discharge there is evolved a carcinoma. But in those cases which originate in a closed tympanic cavity we must assume a metaplasia of the cylindrical-celled lining membrane into the squamous-celled variety,

or conclude that the neoplasm is derived from glandular elements within the cavity²⁰.

Invasion of the bone takes place from the tympanum and its destruction goes on rapidly with the formation of irregular sequestra. The bone is destroyed partly by pressure and partly by obliteration of its blood supply. The labyrinthine capsule, because of its compactness, is particularly resistant to the new growth. The dura also presents a decided barrier to its extension to the brain. Though covered with the so-called granulations, the dura is frequently found intact upon its inner surface.

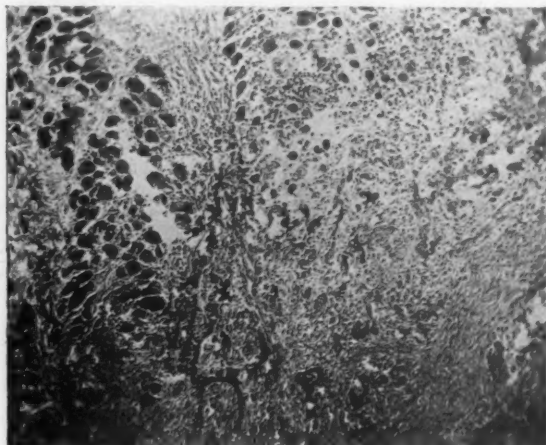


Fig. 4. Hematoxylin and eosin. Groups of epithelial cells invading striated muscle. X 750.

The adjoining lymph glands are enlarged but microscopically they give the picture of an inflammatory reaction with small-celled infiltration. Practically never do they show the presence of carcinoma cells.²¹

With the advance of the new growth, neighboring organs become involved. The parotid gland and mandibular joint are among the first to be invaded. The lateral sinus is not infrequently surrounded by the carcinoma and obliterated, and in advanced cases the meninges, brain, and cranial nerves are attacked.

Metastases to other parts of the body are very unusual. The lungs and mediastinum were found the seat of metastases by Treitel²² and Lange.²³

Carcinoma of the middle ear runs a rather rapid course, though its progress is much slower than sarcoma of the same region. In any given case it is impossible to determine the exact duration, for one cannot fix upon the time the neoplasm started. However, the interval from the first symptoms of pain to the time of death is from eight to eighteen months, with one year as the average duration. Death is caused by meningitis, brain abscess, hemorrhage, exhaustion or by the direct extension of the growth to the vital centers.

An early diagnosis can be made only with the microscope. For this reason every aural polyp, especially in persons over forty years

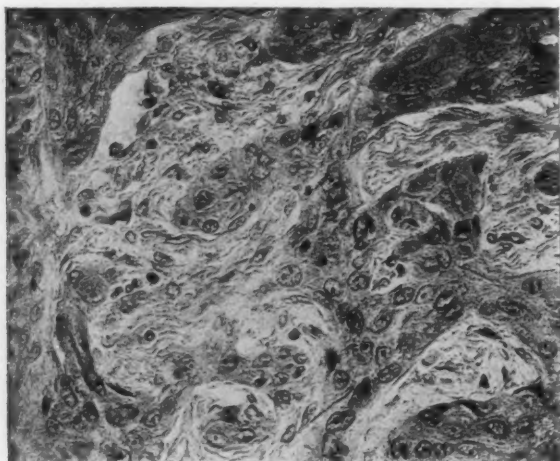


Fig. 5. Hematoxylin and eosin. High power view of morphology and arrangement of epithelial cells with intervening connective tissue. A mitotic figure in center of picture. X 2000.

of age, should be microscopically examined. Furthermore, all suspicious granulation tissue removed in the course of the radical operation should be carefully scrutinized because of the possibility of malignancy.

Radiography of the mastoid region offers large future possibilities as an aid to diagnosis by the early recognition of destruction of bone before the growth has extended far beyond the tympanic cavity.

Luetic disease of the bone must be excluded by the history and by serum diagnosis.

The prognosis is hopeless in all unoperated cases. Stein²⁴ reported a case in which a polyp was removed with the snare. The microscope proved it to be a carcinoma, but there was no recurrence. Jansen²⁵ operated a case which lived eight months without recurrence, dying of an intercurrent disease. Whitehead²⁶ reported a case which showed no recurrence twelve months after operation.

From the non-fatal cases in the literature we must conclude that the prognosis is favorable in proportion to the earliness of the diagnosis and the thoroughness of the operative procedure.

The only effective treatment consists in thorough operation. Some recent writers, including Brindel²⁷ and Zebrawski²⁸, advise against all interference. This view, however, is not shared by the major-

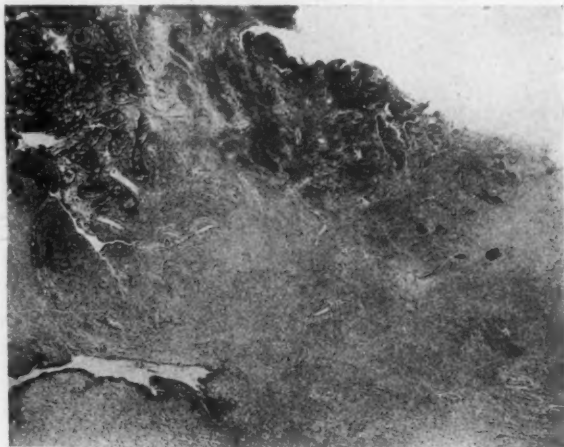


Fig. 6. Hematoxylin and eosin. Low power view of bony trabeculae in one portion of section and masses of epithelial cells in another portion with intervening inflammatory connective tissue. X 35.

ity of otologists. As early as 1898, Heyer²⁹ successfully resected the temporal bone for a carcinoma primary in the external ear, but with extensive bone involvement.

Dr. Holinger has recently written us of an unpublished case, the patient aged thirty-eight or forty, operated upon ten years ago and still alive. Dr. Carl L. Larsen, of St. Paul, in November, 1914, operated on a man aged fifty, doing a radical mastoid followed by the actual cautery, and he recently advised us that his patient has had no recurrence. This case has not yet been published.

For the sake of relieving suffering, the considerate surgeon will usually decide to operate in all but the most advanced cases. And

the fearless operator, who is so fortunate as to see his case sufficiently early, will operate with some reasonable hope of a successful outcome. We must regard as inoperable those cases in which there is extension within the cranium or into the soft parts of the neck.

Thus far we have been unable to find, either in the literature or through inquiry, any positively successful results from the use of radium or the x-ray in treating carcinoma of the middle ear. Urbantschitsch⁸⁰ has recently published a report of several cases of ear diseases successfully treated with radium, including an epithelioma and a sarcoma of the external ear.



Fig. 7. Post-mortem photograph showing extensive destruction of temporal bone.

Deep Roentgen therapy by improved technic, when employed as an after treatment following operation, promises much for a larger percentage of cures in this disease.

My own case, Mrs. E. C., age 65, was first seen May 12, 1915. She complained of severe pain within the right ear and of an unpleasant discharge with occasional bleeding from the canal.

Family history, negative. No previous ear disease.

Present illness began in January, 1915, with an attack of influenza, when she felt a fullness in the ear, followed by pain which was relieved in a few days by the onset of a discharge. She felt variable pains in the right ear until April 15, when she noticed that

the discharge was at times more copious and consisted largely of blood. The pains became more severe, but were relieved for a time by each hemorrhage.

Examination showed a woman well past middle age, somewhat cachectic, extremely restless and worn by pain. Weight, 145 pounds.

The right canal was partly filled with a dark, fetid discharge. The inner fourth of the posterior superior meatal wall was red and slightly swollen. All but the anterior inferior third of the drum-head was destroyed. The ossicles could not be found. Within the tympanic cavity, but not extending into the canal, were dark red, bleeding granulations. The probe revealed exposed bone in the posterior portion of the tympanic cavity. The mastoid showed no swelling or redness, but was tender over the antrum and tip. There were no enlarged cervical or auricular lymph glands.

The left ear was normal.

Hearing distance for the right ear (left ear excluded with the Båråny apparatus) was ten feet for the voice and two feet for the whisper. Weber lateralized to the right, Rinne negative on the right, positive on the left. No spontaneous nystagmus; fistula test negative.

An immediate radical mastoid operation was advised. The patient was referred to Dr. J. G. Cross for a general examination. He reported a blood pressure of 190, with a chronic nephritis and advised a postponement of the proposed operation.

May 26, we observed a slight facial paresis on the right side involving all three branches. The pains became more intense.

Wassermann was negative. A Roentgenogram made at this time showed extensive destruction of the bone.

Malignancy was suspected and we again urged operation to relieve pain.

May 28. Operation, St. Barnabas Hospital. The primary post-auricular incision was attended by excessive bleeding. The knife on cutting through the periosteum plunged deeply into the mastoid, which was filled with highly vascularized granulations interspersed with small irregular sequestra. The large cavity was thoroughly cleansed with the finger and curette. Surrounding the labyrinthine capsule a large sequestrum was found which could not be removed without destruction of the labyrinth. It was therefore left. A small area of dura covered by granulations was exposed over the middle fossa.

A diagnosis of inoperable malignant growth was made. The patient's age and poor physical condition and the involvement of the dura rendered further procedure unwise.

The patient rallied rapidly from the operation and on the second day stated she was entirely free from pain. The facial paresis completely disappeared by the fifth day.

The wound healed rapidly and the patient's general condition improved noticeably as a result of the rest which was now possible.

July 6, the right ear perceived the whisper at eight inches. Weber was lateralized to the right. The course was uneventful until August 3, except for the occasional return of pain and slight hemorrhages on change of dressing.

August 3. Tumor masses appeared deep in the auricular canal. The superior branch of the facial nerve again showed paresis.

August 6. The facial paresis now extended to all three branches. Because of a return of very severe pain a second operation was decided upon. Tested before the operation, the right ear perceived the conversation voice at fourteen inches (exclusion apparatus in left ear).

Second operation August 7, Dr. E. S. Strout, assisting. The original incision was opened. The cavity in the bone had grown and was filled with granulations and sequestra which were removed, except the large movable mass corresponding to the labyrinthine capsule. The facial nerve was found exposed in the cavity for a distance of more than one centimeter. The dura over the middle fossa covered by granulations was exposed over an area with a diameter of nearly two centimeters.

August 8. The patient again rallied promptly from the operation. The pains diminished.

August 10. The C₄ fork and the voice were perceived through the dressings. There was no spontaneous nystagmus and no nausea. Weight 123 pounds.

September 1. The patient left the hospital for a short walk. The pains increased, but were controlled by codein. The cachexia was very noticeable. The facial paralysis was now complete. Patient perceived the loud voice at eight inches, left ear excluded.

September 6. A very severe spontaneous hemorrhage occurred from the canal and the post auricular wound, but was controlled by a firm packing.

The course so far was afebrile. Temperature on this date was 99.2°, pulse 112. The patient being very restless from pain, morphine was necessary for the first time.

September 9. There occurred a very severe hemorrhage on change of dressing. Pulse 158, irregular.

September 12. During the night there was a severe spontaneous hemorrhage. The patient was very weak and delirious.

September 13. Death.

Pathological Examination by Dr. Harold E. Robertson. External examination of the body showed a rather poorly nourished, adult female, 163 cm. in length. Pupils dilated, unequal, the right measuring 7 mm., the left 6 mm. in diameter. Slight general subcutaneous edema. Multiple fine cutaneous hemorrhages in the skin over the left shoulder and to a less extent over the right shoulder and right side of abdomen. Behind the right ear is an excavated ulcer 6.5 cm. in length, 3 cm. in width, and 2.7 cm. at its greatest depth. Its inner surface is covered by a smooth granular membrane from which bony points project and from which on palpation pockets of thick, yellowish pus are discharged. This granular appearing ulcer extends downward toward the parotid gland and also evidently involves the bony parts immediately adjacent to the external auditory canal. The skin of the right side of the face is smoother than that of the left and the right angle of the mouth is slightly depressed.

Internal examination of the body shows advanced degree of arteriosclerosis with chronic diffuse nephritis and fibrous changes in the myocardium. Both tonsils contain thick, yellowish material embedded in the crypts but neither tongue, pharynx, or larynx shows any evidence of tumor or ulcerative processes.

On removing calvarium, the longitudinal sinus fails to show any evidence of thrombosis. On removing brain from skull, on the inside of the dura at the junction of the squamous and petrous portions of the right temporal bone is an oval raised plaque, measuring about 3x2 cm., and corresponding in position to the excavated area described above. This plaque is composed of firm tissue having a slight granular appearance and yellowish tinge, resembling markedly the tissue which lines the entire ulcer. Pieces of dead bone are readily removed from the base of this ulcer and the process is now seen to involve the facial nerve, the right inferior maxillary bone, the posterior portions of the right parotid gland, and the outer portions of the bony labyrinth on the right side. In all of these locations the bones are embedded in a granulation-tissue-like mass which had evidently partially destroyed the periosteum, creating small sequestra during the process. There is no evidence of any in-

volvement of adjacent lymph nodes or of the inner surface of the calvarium or other regions of the neck or face or any portion of the brain.

Microscopic examination of portions of the tissue involved in this ulcerated area shows masses of epithelial cells resembling in arrangement and morphology squamous epithelium. Typical pearl formation is illustrated at several points. Many of these pearls have become definitely hyalinized and are surrounded by nuclei of large giant cells. In other portions these cell nests are extremely active in growth, as indicated by the large proportion of mitotic figures and their invasion of muscle in some areas and in other portions of lobules of the parotid gland.

Examination of the specimen removed at the operation shows cell nests corresponding in every respect, except for the absence of epithelial pearls, with the tissue just described.

The diagnosis in this case is clearly a squamous cell carcinoma. At the post mortem its point of origin could not be definitely determined, but the very marked involvement of the structures of the middle ear strongly suggests this site as the origin of this growth.

BIBLIOGRAPHY.

1. Ueber Carcinom des Schlaefenbeines. *Archiv. f. Ohrenheilkunde*, 1886, V. 24, p. 231.
2. Ueber das Carcinom des Gehoerorgans. *Archiv. f. Ohrenheilkunde*, 1899, V. 48, p. 141-190.
3. Cited by Treitel, *Zeitschrift f. Ohrenheilkunde*, 1898, V. 33, p. 152.
4. Des Tumeurs maligne primitives de l'Oreille Moyenne. *Gazette Medicale de Nantes*, 1910, V. 28, p. 89-93.
5. *Proceedings Royal Soc. Med.*, London, 1907-08, Otol. Sec., discussing report of Whitehead's case.
6. (a) WHITING, F.: *N. Y. Eye and Ear Infirmary Reports*, 1898, Vol. 6, p. 91-98. Carcinoma of the Mastoid and Auricle Originating in the Tympanum or Antrum, Consecutive to Chronic Otitis Media.
- (b) GERBER: *Arch. Otol.*, N. Y., 1904, p. 482. Three Cases of Tumor of the Ear.
- (c) BEHRENS: *Trans. Am. Laryn., Rhinol. and Otol. Soc.*, 1905. A Case of Epithelioma of the Middle Ear.
- (d) HALSTEAD: Discussing above.
- (e) LUTZ: Discussing above.
- (f) KNAPP: Discussing above.
- (g) BRAISLIN: *Ann. Otol., Rhinol. and Laryngol.*, 1907, p. 90. Epithelioma of the Ear.
- (h) GOLDBACH: *THE LARYNGOSCOPE*, 1914, p. 128. Squamous Epithelioma of the Middle Ear and Mastoid.
7. *Die Ohrenkrankheiten in Kindesalter*, Leipzig, 1912.

8. Das Mittelohrkarzinom im Lichte moderner Krebsforschung, *Arch. f. Ohrenheilk.*, 1908, p. 177.
9. Ueber die Bildung von Labyrinthsequester bei Mittelohrkarzinom. *Verh. d. Deutschen Otol. Gesellschaft*, 1908, p. 130-135.
10. Cited by Behrens, *Trans. Am. Laryngol., Rhinol. and Otol. Soc.*, 1905.
11. Ueber das Karzinom des Ohres., *Zeitsch. f. Ohrenheilk.*, 1898, Vol. 33, p. 152.
12. Beitrag zur Kenntniss des Felsenbeinkarzinom. *Arch. f. Ohrenheilk.*, 1896, Vol. 41, p. 35.
13. Epithelioma of the Middle Ear (Traumatic). *Proc. Roy. Soc. Med.*, London, 1907-08, I.
14. Carcinoma of the Middle Ear. *Proc. Royal Soc. Med.*, London, 1911-12, Otol. Sec., p. 26.
15. Report of Two Cases of Epithelioma of the Middle Ear, Treated With Pyoktannin. *Journal Laryngol., Rhinol. and Otol.*, 1898, p. 343.
16. Cancer of the Ear. *Lancet*, London, 1892, p. 497.
17. Ueber die Bildung von Labyrinthsequester bei Mittelohrkarzinom. *Verh. d. Deutschen Otol. Gesellsch.*, 1908.
18. Carcinome Epithelial de l'Oreille Moyenne. *Revue Internat. de Rhinol., Otol. et Laryn.*, 1898, II, p. 243.
19. Ein Fall von primären Zylinderzellenkarzinom des Mittelohres., *Ziet. f. Ohrenheilk.*, 46, 1904, p. 209.
20. PANSE: Pathologisches Anatomie des Ohres. Leipzig, 1912.
21. LEIBLER: Das Mittelohrkarzinom im Lichte moderner Krebsforschung. *Arch. f. Ohrenheilk.*, 1908, p. 177.
22. TREITEL: Ueber das Karzinom des Ohres. *Zeitschr. f. Ohrenheilk.*, 1898, 33, p. 152.
23. LANGE: Cited above.
24. STEIN: Beitrag zur Lehre von der Geschwulsten des Ohres. Inaug. Dissert., Königsburg, 1896.
25. JANSEN: *Verh. der. Deutschen Otol. Gesell.*, 1897, p. 241.
26. *Proceed. Royal Soc. Med.*, London, 1907-08, Otol. Sec., p. 34.
27. *Rev. hebdomadaire de Laryngol.*, etc., 1912, I, p. 689-701.
28. *Monatsch. f. Ohrenheilk.*, 1912, p. 217.
29. Ueber einen Fall von Ohrkarzinom behandelt mit Resection des Felsenbeines Deutsch. *Zeit. f. Chirurgie*, I, 1898-99, p. 522.
30. URBANTSCHITSCH, V.: Ueber einige mit Radium behandelte Ohren-faelle. *Archiv. f. Ohrenheilk.*, 96, p. 15.

A NEW INSTRUMENT AND TECHNIQUE FOR ENUCLEATION OF THE TONSIL.*

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The operation for enucleation of the tonsil has for its object the complete removal of the gland without injury to the adjacent structures,—the pillars, uvula, palatal arch, muscles, and the fascial aponeurosis. The operation must also be completed in as short a time and with as little hemorrhage, shock, and pain to the patient as possible.¹ The numerous methods for enucleation of the tonsil which have been devised within the past few years, show that the need for a simple, efficient, and safe technique for this most frequent of operations has not been fully met.

At the present time the two methods for enucleation most frequently employed are: First, the guillotine operation, with the instrument modified by Sluder,² with additional modifications by others; and, second, the snare operation, in which the tonsil is severed from its attachments by means of a cold wire, after a more or less complete dissection from its bed in the fossa.

The advantages of the Sluder technique are the speed, short anesthesia, the small amount of resulting scar tissue, and the ease with which the operation can be performed when the technique is mastered. Its disadvantages are the considerable primary and the occasional secondary hemorrhage, the greater liability to trauma, due to working by the sense of touch rather than by sight, such injury as buttonholing or removing part of the pillar, laceration of the mucous membrane, removal of part of, or injury to, the intrapharyngeal aponeurosis being not infrequent. Because of the obscured field caused by the free bleeding after removal of the first tonsil, the possibility of injury is greatly increased. Though the hemorrhage is less profuse when the dull Sluder guillotine is employed and the finger or instruments used to complete the separation from the surrounding structures, the trauma and consequent reaction are markedly increased.

In favor of the snare operation chiefly is the greatly diminished hemorrhage, the result of crushing through the pedicle

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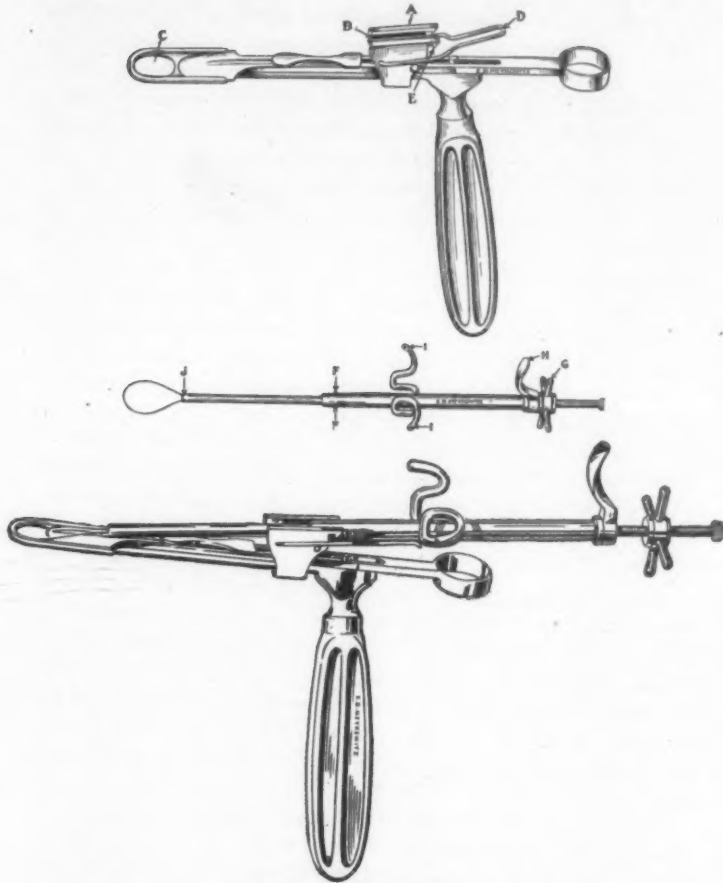


Fig. 1. Snaretome.



Fig. 2. Mouth Gag.

containing the vascular supply of the tonsil. This advantage alone would warrant the universal adoption of this method were it not for the fact that it requires considerable experience to develop a good technique which, even when mastered, does not prevent the operation from being sometimes a long and tedious one, because of difficulty in dissecting the tonsil out of its bed. The patient is thereby subjected to increased trauma, shock, and a prolonged anesthesia. The adjacent tissues are traumatized by the instruments employed to free the tonsil from its attachments. When sharp dissection is employed, and in a lesser degree with dull dissection, the aponeurotic lining of the tonsillar fossa, which is a part of the intrapharyngeal aponeurosis,³ is almost always injured or removed, exposing the underlying structures and thereby increasing the danger of hemorrhage and of infection. Prolonged and painful post-operative reaction often ensues and the amount of scar tissue is greatly increased, resulting in palatal deformities and contraction and binding down of the pillars. Not infrequently, obliteration of the tonsillar fossa results. These deformities often give rise to marked changes in the voice.

An instrument has been devised for the purpose of combining the advantages of the guillotine and the snare operations and at the same time avoiding the defects of both. This instrument, which might be called the snaretome, simplifies the technique of the snare operation. It minimizes hemorrhage and shock, diminishes the amount of trauma, shortens the time required for the enucleation, and obviates the complications and sequelae that often ensue.

The instrument consists of two parts: first, the guillotine of Sluder, modified; and, second, a snare to which the guillotine is attachable. The guillotine has been modified by placing on the proximal end of the shaft of the instrument, near the handle, a slide to which a detachable spring has been added. The slide with the spring holds the snare in proper relation to the guillotine until the tonsil is securely engaged. The blade of the guillotine, which is blunt, is shortened around its circumference at the distal end so that it does not quite reach the distal arc of the fenestrum. The blunting and the shortening of the blade obviate the cutting action of the guillotine. At the proximal end of the blade is a ring for the thumb by means of which the operator can readily push forward or draw back the blade, thereby closing or opening the fenestrum. In the arc around

the fenestrum is a deepened groove for concealment of the snare loop. The snare is simple in construction, consisting of a slotted canula and a stylet threaded at its lower half. To the middle of the stylet, which travels easily through the canula, two finger rests are attached. On the proximal end of the canula a thumb-piece is placed, which serves also the purpose of closing securely the slotted end. The snare operates quickly on the pull, and gradually by action of the traveling screw. At the distal end of the canula, are projecting teeth which become embedded in the tonsil when it is about to be severed, so that when the enucleation is completed the tonsil remains fixed on the end of the snare. At each side of the canula of the snare is a trunnion or pin which causes the guillotine to engage to it.

The instrument is assembled in the following manner: A strand of No. 7 piano wire, five and three-quarter inches long, is bent three-eighths of an inch at each end. Both ends are inserted in the second or proximal opening of the stylet, thus forming an oval and even loop which does not become dislodged during the operation. The stylet is now drawn into the canula until its tip is just visible. By depressing the snare against the spring of the slide, at the same time pushing the snare forward until the trunnions or pins engage into the groove of the slide of the guillotine, the snare and the guillotine are assembled. The loop is now readily engaged in the groove in the arc around the fenestrum by regulating its size. To enlarge the loop, forward pressure is made on the proximal end of the stylet; to make it smaller, slight traction is made on the finger rests until the loop is of proper size to remain concealed in the groove. This manipulation is done with the instrument assembled.

The gag used in this operation is one devised by Jennings, modified by attaching two springs to the upper bar. These springs are intended to hold the snare out of the operator's field after the first tonsil is secured in the snare loop. The snare is engaged to the gag by the spring, and is so maintained until the second tonsil is also ensnared and the operator ready to complete the enucleation of both tonsils.

Illumination: Good daylight or the ordinary operating room illumination will suffice in every instance.

The technique: The head and shoulders of the patient are slightly elevated. Into the mouth, widely opened by the gag, the snaretome is introduced until the distal arc of the fenestrum is behind the tonsil, which is thereby fixed from behind, and the

posterior pillar pushed aside. The instrument, with the thumb engaged in the thumb-ring, is held in the right hand for the right and in the left hand for the left tonsil. As the upper pole of the tonsil is the first to be engaged in the fenestrum, the angle at which the instrument is applied varies with the position of the tonsil in the fossa. The shaft of the instrument is directed upward, backward, and outward when the upper pole of the tonsil is high up between the pillars; backward and outward when it is low, the shaft of the instrument lying across the mouth. Firm pressure is made, and the handle of the instrument is then elevated so that the shaft now points downward, backward, and outward, so that the fenestrum lies behind and to the outer side of the tongue. Without relaxation of pressure, the instrument is drawn forward and upward onto the alveolar eminence of the mandible. Moderate force is required to facilitate the passage of the tonsil through the fenestrum. This accomplished, the blade is pushed forward by the thumb, pressure against the mandible being meanwhile evenly maintained, so that the blunt blade closes on the tissues in the line of cleavage between the tonsil and the anterior pillar. The closing blade is kept as close as possible to the tonsil, so that only that portion of mucous membrane covering the tonsil is removed, conserving the mucous membrane at the margin of and behind the anterior pillar. This precaution saves from one-eighth to one-quarter inch of the mucous membrane of the fossa. Usually the tonsil is properly engaged in the fenestrum with the first application, but if there be any bulging in the anterior pillar it indicates that all of the tonsil is not engaged. Without removing the instrument from its position in the fossa, the tonsil is released by simply drawing back the blade with the thumb, and application is again made until the tonsil is satisfactorily grasped within the fenestrum. The pedicle, which consists of two layers of mucous membrane and the thin areolar tissue by which the tonsil is attached to the intrapharyngeal aponeurosis and through which all the blood vessels supplying the tonsil enter, is now firmly in the grasp of the guillotine. Additional pressure on the closed blade will result in a more effectual strangling of the pedicle and will give almost perfect hemostasis. With the thumb and fingers of the other hand, the snare loop is now drawn tight and held firmly, this action automatically releasing the guillotine from the snare. The guillotine is then laid aside without releasing the hold on the snare. With the free hand, the traveling screw

is now quickly turned until the tonsil is safely seized in the snare loop, an extra turn or two assuring firmer grasp of the tonsil and serving to further compress the pedicle with its blood vessels. The snare is then engaged to the gag so that the operative field remains unobstructed and bloodless.

The guillotine is now engaged to a second snare and the procedure is repeated on the other tonsil. Both tonsils are now firmly held in the grasp of the snares, and by slowly turning the traveling screws of the snares the enucleation is completed. During this last procedure, slight traction is made on the snare, so that it is removed from the mouth at the moment the tonsil is severed, the tonsil remaining fixed on the teeth or the snare. If there be an assistant, the enucleation of both tonsils may be completed simultaneously, operator and assistant each turning the screw of one of the snares. Two shaped sponges are gently pressed against the denuded areas and held there for a half to one minute, giving practically dry tonsillar fossae.

If adenoids be present, they are removed in the usual manner, and a dry sponge is firmly applied to the retropharynx for a half a minute to one minute.

Examination of the fauces shows the pillars, palate, uvula, and the mucous membrane covering them, to be intact and without evidence of traumatism. There is no injury to the intrapharyngeal fascia which lines the tonsillar fossa. This is evident when it is remembered that the rim of the arc of the fenestrum when pressed against the pillars renders the intrapharyngeal fascia and pillars taut and allows only the thin, loose, areolar tissue which is adherent to the tonsil to engage in the fenestrum when the blade is closed. Thus, what Makuen calls an intra-capsular enucleation⁴ is performed.

The removed tonsils are mushroomed. Restoring the normal relationship of the tonsil and its capsule, it is seen that the tonsil is complete, that the mucous membrane is cut very close to the tonsil, leaving no shreds—the cut edge appearing like a distinct line around the tonsil. The external cut surface shows a pale, thin layer of connective tissue through which glandular structure is readily seen, and no muscular tissue is adherent. The thin layer of connective tissue can be lifted from the tonsil and is seen to be translucent. A few small blood vessels are noted in this connective tissue capsule, which is not a part of the true intrapharyngeal aponeurosis. It is in this areolar layer that the

blood vessels are most easily and effectively compressed, and hemostasis is frequently complete.

In other words, the capsule of the tonsil is split⁵ so that the thin areolar portion remains adherent to the enucleated tonsil, and the thicker layer which is part of the intrapharyngeal aponeurosis descending from the base of the skull is left, uninjured, lining the denuded tonsillar fossa.

The post-operative reactions are very slight, if present at all. The decreased trauma, absence of injury to pillars, uvula, palate, and intrapharyngeal aponeurosis, the conservation of mucous membrane, and the greatly diminished shock and hemorrhage combine to minimize the discomfort and dangers. Pulmonary complications and cellulitis have not been met with. Prostration is absent. Pain, difficulty in swallowing, are mild when encountered, and subside in one to three days. Complete healing of the wound takes place in one week or less, without deformity.

Conclusions: Experience with the method in over 1,600 cases in the Children's Clinic of the New York Department of Health and in private practice, and in more than 400 cases with the present improved instruments, shows the technique to have the following advantages:

- (1) The decreased hemorrhage, both primary and secondary, and consequent avoidance of secondary anemia.
- (2) The markedly decreased traumatism to the fauces—there being no injury to pillars, uvula, palate, pharyngeal muscles—and the diminished amount of mucosa injured and removed. This result is also contributed to by the absence of sponging.
- (3) The preservation of the normal anatomical relations of the pillars, palate, uvula. The absence of contracting scar tissue avoids shallowing of the tonsillar fossa.
- (4) The enucleation with equal ease of every type of tonsil, small, large, mushy, fibrous, flat, submerged. Thus but one technique is required for all cases.
- (5) The diminished number of instruments and their simplicity.
- (6) The ease with which the technique is performed, and the automatic action of the instruments, requiring little attention from the operator.
- (7) The impossibility of engaging in the snare any tissues other than those engaged in the guillotine.

(8) The diminished narcosis which, with the lessened hemorrhage, tends to avert pulmonary complications.

(9) The greatly reduced danger of septic infection, because of the very markedly diminished trauma and the absence of injury to the intrapharyngeal fascia.

(10) The dry field after ensnaring the first tonsil, rendering unnecessary the use of suction apparatus or sponging to keep the operative field unobscured for the engagement of the second tonsil.

(11) The use of daylight or the ordinary operating room illumination, avoiding the necessity for complicated, cumbersome and costly electric apparatus.

(12) The ease with which the operator can determine by sight whether the tonsil is completely engaged and, if not, the facility with which further application can be made until the complete tonsil is included in the fenestrum.

(13) The saving of time gained by dispensing with the use of tonsil-seizing forceps, knives, separators, scissors, their function being more effectively performed and, with far less trauma, by the guillotine of the snaretome.

(14) The lack of need for assistants for the proper and safe performance of the operation.

(15) The absence or mildness of reactions, and the prompt recovery from them when present, complete healing taking place within a week.

All these advantages make for the safety and comfort of the patient and lighten the burdens of the surgeon. They remove the element of doubt as to the immediate and remote results of the operation.

REFERENCES.

1. RICHARDS, GEORGE L.: In *Operative Surgery of the Nose, Throat and Ear*. Loeb. C. V. Mosby. St. Louis, 1917, Vol. II, p. 197.
2. SLUDER, GREENFIELD: *Journal American Medical Association*, Vol. LVI, March 25, 1911, p. 867.
3. PATTERSON, D. R.: The Significance of the Tonsils and the Supratonsillar Fossa. *Journal of Rhinology, Laryngology and Otology*, London, Vol. XXVIII, 1913, p. 453.
- 4 and 5. MAKUEN, G. HUDSON: The Surgical Anatomy of the So-called Capsule of the Faucial Tonsil. *THE LARYNGOSCOPE*, Vol. XXV, 1915, pp. 685 et seq.

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HEADACHE: ITS OTO-RHINOLOGICAL ASPECTS.*

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This subject is a very broad one. It would be impossible to cover the entire field in several symposiums. I will only attempt to mention and discuss some of the most common causes of the symptom "headache." I say symptom, because headache is no more a disease than rheumatism, and we should be severely criticised if we treat this condition without finding the cause. The causes of "headache" may be divided into the following heads: Toxic (intestinal, appendiceal, gall-bladder, prostatic, tonsillar, nasal cavities, dental, renal, aural); reflex from eyes, pressure in nose, from uterus, from irritated tooth.

I shall limit myself to the causes found in ear, nose and throat.

The most common and most often overlooked cause, from personal observation, is pressure in the nose, without any marked pathological condition being apparent.

Case 1. Mrs. H., referred to me from Baton Rouge, suffering with very severe pain over entire right side of head, more severe in supraorbital region. Patient had been under physician's care for past two weeks and only relief was obtained from morphin.

Examination of nose. Membranes look healthy, no abnormal secretion. Middle turbinate on right tightly wedged between septum, which is slightly deviated in upper part to right and outer wall of nose. It was impossible, even after tissues had been shrunk, to pass the smallest cotton-wound applicator between the septum and turbinate; or turbinate and outer wall. Color of turbinate pale from pressure. Middle turbinectomy performed; patient relieved at once. She explained that she had the sensation of a spring being removed and pressure relieved. Patient has had no trouble since, now eight months.

I could cite any number of such cases where either the middle turbinate or septum have been removed and the patient cured.

Case 2. Mr. G. D., age 44. Past history negative. About 12 years before I first saw the patient, he began having a pain and a throbbing over the left side of the head, at first periodical, increasing in frequency. He has been treated by a number of physicians

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without much result. Eyes, negative. Pains are now constant and very severe; has had to give up work.

Examination. Septum deviated to left, middle turbinate scarcely visible and seems tightly wedged, slight amount of mucus but no pus. Submucous resection performed. Patient's condition improved rapidly; it is now two years since operation and he has had no headaches. This is another case of pressure pain and possibly a secondary occlusion of the sinuses. Just a few words in regard to the sinuses. It is often hard to say just what sinuses are at fault. Often all are involved.

Case 3. Patient has suffered with headaches for 16 years and has been to various clinics; was sent to the nose and throat clinic about two weeks ago. Slight amount of pus found under the middle turbinate and posteriorly. Antrum washed out and great amount of pus was found. Patient relieved for 24 hours. Three days later the antrum was again washed. This washing was repeated every other day for ten days, but the pus and the pain continued. January 30, the inner wall of the antrum was removed. Patient is now free from headache and the amount of pus is very slight. In this patient the symptoms were due to pus absorption and possibly to some reflex irritation of the branches of the fifth nerve.

Suppuration of the frontal sinus will often give no pain, as long as drainage is good. However, the most violent pain is caused when we have a closed suppurating frontal sinusitis. Often simply removing the obstruction and washing out or aerating the sinus will relieve the condition. Ethmoid sinusitis causes a number of obscure headaches; the pain is very variable, from a sense of fullness over the bridge of the nose, to severe pain over the entire head. Another reason why headaches from the ethmoid sinuses is hard to diagnose is that there often is no visible trouble. We may, by probing, find a polypoid condition and after excluding other sinuses, place the blame on the ethmoids. In polypoid sinusitis, there is often no pus and very little abnormal secretion.

Last but not least is the sphenoid sinus. No doubt this sinus is the cause of a great many obscure pains in the head. Let us just a moment consider the anatomy of this sinus. The sphenoids are two irregular shaped cavities in the back part of the nose, just posterior to the ethmoids; their openings are at the top and very seldom visible. Posteriorly they are separated by very thin bone from the pituitary body, cavernous sinus and the third, fourth, fifth, sixth and Vidian nerves. These nerves are often found running under the

mucous membrane of the sinus, or only separated from it by a thin wall of bone. By injecting cocain into this sinus, we can often get anesthesia of one or more of these nerves. Now, if absorption of cocain can take place into the nerves, does it not stand to reason that a sinus full of pus or degeneration, would affect these same nerves?

Dr. Greenfield Sluder stated in a paper read before the American Medical Association, May 5, 1915, as follows: "I believe many (but not all) of the recurrent headaches that bear the name migraine are sphenoidal empyemata, that have lost most if not all local signs; or were started as such empyemata; and that the nerve trunks have become involved either by extension of the inflammation (or its toxin) through the thin wall separating the sphenoid sinus from the adjacent nerve trunks."

The treatment of these cases is removal of the anterior wall of the sphenoid, and if badly diseased, curetting gently and washing out with aqueous solution of sodium salicylate (2 to 5 per cent) or 1 per cent carbolic acid in oil.

Often the headaches spoken of as occipital are sphenoidal in origin.

Case 4. Mrs. H., age 45, has suffered nearly continually with pain in the occipital region, often very severe; duration two years; has been treated by gynecologist, oculist, general practitioners, osteopaths and even Christian Scientists, with very little relief.

Examination of nose. Nothing abnormal noticed. Post nasally one could see a small amount of thick pus over the posterior end of the middle turbinate; removed middle turbinate and curetted the posterior ethmoids. Patient slightly relieved. -Two weeks later opening of sphenoid found and the sinus washed; much improved. Anterior wall removed later. Patient is now entirely relieved; only occasionally comes to have sinus irrigated.

We should always be on the lookout for trouble with the teeth, causing reflex pains in head. In touching on this part of the subject very lightly, I would caution all about relying too much upon the appearances of a tooth. The x-ray is the only reliable way to rule out the teeth as causative factors. In the throat the most common cause of headache is absorption from diseased tonsils. Often we get reflex pains from the ears in chronic catarrhal otitis. The pains from acute otitis, mastoiditis, sinus thrombosis, brain abscess and a number of other conditions about the head and neck can only be mentioned.

Case 5. Mrs. C. F., age 44, has had discharge from the left ear as long as she can remember. For the past ten years she has suffered a great deal of pain over the left side of the head, often very severe. Two months ago she was suddenly attacked with violent vertigo and could not stand up. Nausea and severe vomiting. Was sent to the Charity Hospital and admitted to the medical service. I was called to examine the ears. At this time patient had free discharge of pus from the left ear; drum membrane bulging. Mastoid only slightly tender; strong nystagmus to the right; could not sit up in bed as she would always have tendency to fall to the left. No labyrinthine tests were made; advised patient's transfer to otological service. I did not see the patient for a week, then was called by one of the otologists in consultation. The patient was now very ill, temperature 103°. Mastoidectomy was performed the next day; found very sclerotic bone, small antrum, middle ear full of cholesteatomatous material. Fistula in horizontal semi-circular canals. The patient has made an uneventful recovery; all dizziness and nystagmus have disappeared. The patient now has no headaches and feels in every way much improved. This case is not reported in detail as to the interesting labyrinth condition, but to illustrate headaches from chronic otitis.

Case 6. Miss S. M., age 29. April 23, 1914. Headache all the time over eyes and back of head. Tightly wedged middle turbinate removed from the right side of the nose. Septum deviated considerably in upper part to the right; no visible pus.

May 11. Has had very little pain in the head for the past two weeks and feels much better.

May 14. Pain over right side of the head, pus coming from right frontal and ethmoid regions. Wassermann, negative.

May 20. Pain still severe, impossible to enter frontal on account of deviated septum.

May 24. Suffering a great deal. Sent to Presbyterian Hospital. X-ray shows ethmoids on right very cloudy.

May 27. Submucous resection of septum and ethmoids scraped, sphenoid opened. Patient, as would be expected had considerable pain.

June 29. Patient is now free from pain and feels fine; discharged.

September 1. Patient returned complaining of severe pain in the supraorbital region. Nerve injected with alcohol; relieved two days.

September 17. Supraorbital nerve injected again.

October 26. Patient has remained free from pain until last few days; now severe pain over first and second divisions of the fifth nerve.

November 2. Supraorbital and second division of fifth injected; only temporary relief.

October 16. Supraorbital nerve removed under local anesthesia and forament plugged with wax.

December 8. Patient returned suffering with pain in second and third divisions of the fifth nerve. Injection attempted a number of times by myself and later by Dr. Allen with only slight result.

January 16. Gasserian ganglion removed by Dr. Allen and myself.

January 23. Discharge from right ear, slight facial paralysis.

January 23. Discharge from right ear; drum incised. Facial paralysis marked. Pain over mastoid.

March 2, 1915. Patient has very little pain, still some tenderness over mastoid.

July 9. Mastoid very tender. Leucocyte count, 20,000; temperature, 102°. Mastoidectomy performed under local anesthesia; small amount pus, considerable necrosis of mastoid.

Since this operation the patient has had periodical attacks of pain and tenderness over the mastoid, sometimes over the course of the facial nerve. Her eye has caused a great deal of pain and she has had to use dionin and olive oil freely. Just how to account for this pain over the fifth nerve I am at a loss and hope to have some one explain it. Is it a hysterical condition? Certainly after complete removal of the ganglion there could not be regeneration of the nerve.

In closing, I should like to apologize for presenting a subject in such an haphazard way, my only excuse being that the subject is too large and time too short to do otherwise. My intention was simply to call attention to some of the most common causes of headache and to point out that it is not always an easy matter to say whether the nose and throat are or are not the cause of the trouble.

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LATERAL SINUS THROMBOSIS WITH SPONTANEOUS RUPTURE OF THE SINUS.

DR. ARCHIBALD CARY LEWIS, Memphis, Tenn.

Sinus thrombosis presents such a variety of symptoms and runs such an irregular course that it is one of the most interesting studies in the field of otology. This multiplicity and irregularity may obscure the condition to such an extent as to make a definite diagnosis impossible before operation, or even before autopsy. While the infective thrombosis is usually found in the sigmoid portion of the lateral sinus, it may involve the whole lateral sinus from end to end, including the jugular bulb and vein; also the superior and inferior petrosal, the cavernous and the longitudinal sinuses. While the invading organism is usually the streptococcus, other pyogenic bacteria may cause the infection. Horn¹ has recently reported a case of pure streptothrix infection which terminated in cavernous sinus thrombosis and death.

Other complications that tend to change the clinical picture and obscure the diagnosis are extra-dural abscess, meningitis, cerebellar abscess and septicemia. In the absence of all these the diagnosis is not necessarily simple, for in uncomplicated sinus thrombosis we often have no definite symptoms and the disease may progress to a dangerous stage before the physician suspects its presence. These cases are unrecognized because the septic thrombus has been walled off by aseptic blood-clot in nature's effort to bring about spontaneous recovery. Friedenwald² reports several cases of this character and numerous other writers have reported cases in which complete obliteration of the sinus by collapse or blood-clot had been observed during operation or at autopsy. A number of cases are reported of sinus thrombosis running a non-febrile course in which obliteration of the sinus took place. The non-febrile course is variously explained,—by the aseptic character of the thrombus, by the mild nature of the infection, or by the discharge of pus formed through an opening in the outer wall.

The lateral sinus is most apt to be involved during an acute exacerbation of a chronic purulent otitis media. If during the course of an O. M. P. C., acute mastoiditis, or following the mastoid operation, the patient develops a rigor, we immediately think of sinus thrombosis and the importance of early operation. However, we

are not justified in opening up the sinus until we have at least excluded malaria. The similarity of its temperature curve has caused this mistake a number of times. Far more serious is the mistake so often made by the genral practitioner in diagnosing thrombosis as malaria and treating it as such until the patient is in a desperate or hopeless condition. Such were the circumstances attending the case I shall report a little later.

Thorough examination of the blood is of great value in all cases of suspected sinus thrombosis. Not only can we thus exclude malaria, but leucocytosis and high percentage of polynuclears would indicate thrombosis. If the diagnosis is not clear and time permits, a blood culture should always be made to ascertain if a bacteremia exists. Oppenheimer³ and others have found bacteremia to be a reliable sign of infective thrombosis provided other foci of infection are excluded. If a positive culture is obtained they open the sinus at once. So long as suspicious symptoms continue they advise daily cultures until a positive result is obtained or the patient's condition improves. If following the sinus operation, streptococci are found in the blood after the first day, it indicates that the internal jugular vein is also involved in the thrombosis and measures for its operative relief should be at once carried out. The x-ray, which is such a valuable aid to diagnosis in mastoiditis, may be of use in clearing up doubtful cases of sinus thrombosis. It is not to be relied on, however, for the whole lateral sinus may be quite normal and the clot limited entirely to the jugular bulb. In such cases we would expect to find granulations or carious bone on the floor of the tympanic cavity.

The most characteristic and at the same time the most obvious symptom of septic thrombosis is the rigor produced by the entrance into the blood stream of toxins or bacteria. Graham⁴ speaks of the remarkable complacency with which these startling symptoms occurring in ear cases are looked on by many practitioners. We agree with him that one chill is not enough to confirm the diagnosis; one should always wait for a second chill before operating. It may be possible for the patient to have both malaria and sinus thrombosis at the same time and thereby cause diagnostic confusion and dangerous delay. In like manner syphilis or erysipelas may cloud the issue. According to Jansen,⁵ Hessler, and others, thrombosis affects males three and one-half times more often than females. The right side is more frequently affected than the left which is probably due to the greater width of the right sinus.

The internal jugular vein may be thrombosed also; then in addition to the ordinary signs of lateral sinus thrombosis there may also be infiltration of the tissues of the neck or tenderness along the anterior border of the sterno-mastoid muscle. Burghard⁶ says the prevalent idea that a thrombosed jugular vein can be felt on palpation as a hard cord extending down the neck is erroneous. If anything is felt it is the enlarged cervical glands which lie along the vein. We fully agree with him that it is bad practice to palpate the internal jugular as by doing so there is considerable danger of dislodging particles of the septic clot.

The prognosis is more favorable in sinus affections arising during an acute attack of otitis than in the chronic forms. The prognosis is decidedly unfavorable when meningitis, brain abscess, metastases in the lungs, or thrombosis of the cavernous sinus occurs.

To dwell upon the treatment of lateral sinus thrombosis now would be an unnecessary waste of time, but I will repeat for the sake of emphasis that early diagnosis is of paramount importance. Neither time nor trouble must be spared in this and having made a positive, or reasonably positive, diagnosis, we must proceed without delay to open and clean out the infective thrombus as thoroughly as possible.

The following case clearly illustrates the importance of early diagnosis and operation in these cases:

Miss D., age 16, was brought to the hospital June 5, 1916, by her family physician, and I was called in to see her. She gave a history of measles eight years ago followed by running ears ever since. Two weeks ago the right ear stopped discharging and she soon began having an aching pain in the right side of her head. Since then she has had five rigors and a temperature varying from 99° to 103°. During that time she has been treated for malaria. Her appearance was good; she was well nourished and developed, had very good color, mind clear, and resting comfortably. Temperature 100.6°; pulse 130; respirations 26. No inflammation or swelling over the mastoid regions; slight tenderness on pressure over the right mastoid. Right membrana tympani appeared black and necrotic and dark-colored granulations were visible in the middle ear through its opening.

We decided to do a radical mastoid at once and open the sinus if necessary. After making the primary post-auricular incision and elevating the periosteum forward to the bony meatus, we were surprised by a very profuse hemorrhage from the middle ear which

was controlled after a few minutes' pressure applied by packing the middle ear. This unusual condition, we later found, was due to rupture of the walls of the lateral sinus above the thrombus. Removal of the outer plate of bone revealed one large, pulsating, pus cavity comprising the middle ear, antrum and all the mastoid cells. This was filled with a thick, cream-colored pus and rested directly on the dura and lateral sinus, as all the bony covering had disappeared. The dura covering the temporal lobe was of a dark purplish hue, while the outer wall of the lateral sinus was black and necrotic, covered with granulations in part and perforated at the upper margin of the thrombus where the hemorrhage mentioned above had come from. The patient was doing so badly we feared she would die on the table, so after cleaning out the whole cavity as quickly as possible we packed it lightly with iodoform gauze and put her to bed, hoping she would revive sufficiently for us to finish the operation later.

June 6: Patient much improved; temperature 98°; pulse 84; respiration 24; polynuclears 90 per cent. Had rigor at 3 p. m., temperature rising to 102.2°, and another rigor at midnight.

June 7: Temperature 103.2°; pulse 140; respiration 28. Patient very weak and although we feared she would pass away on the table I obtained her father's reluctant consent to finish the operation. After ligating and dividing the internal jugular vein, we proceeded to expose the lateral sinus down to the jugular bulb and back well beyond the thrombus toward the longitudinal sinus. After packing it off above, the sinus was opened from end to end, the clot removed, the bulb curetted out thoroughly and irrigated by forcing normal saline through it and the jugular vein. All softened bone and necrotic soft tissue were then carefully removed from the mastoid and tympanic cavities, iodoform gauze and drainage tubes introduced and external dressing applied. The patient stood the operation well and was in fair condition next morning. Temperature 98.6°; pulse 100; respiration 20. She had no more rigors for three days but continued to run an irregular temperature.

June 10 and 11: Severe rigors. Patient developing a septic color and temperature, which continued to get worse.

June 13: Severe epistaxis controlled by ice packs. Spleen palpably enlarged. Patient restless and murmuring.

June 14: Patient profoundly septic and in state of semi-coma. Pulse too weak to count.

June 15: Death occurred in early morning.

I failed to state that we gave her several injections of Mulford's staphylo-streptococcic bacterin.

This case presents some points of interest and a lesson in the importance of early recognition of these conditions:

1. Spontaneous rupture of the lateral sinus is very rare; the clot usually walls off the blood stream well back of the necrotic sinus wall.

2. The mild nature of both the objective and subjective symptoms attending so much mastoid necrosis, together with this immense epidural abscess and extensive sinus thrombosis.

3. The absence of metastatic foci of infection during the whole three and one-half weeks of its course.

4. Had a correct diagnosis been made two weeks earlier when the patient had her first rigor she would no doubt be alive to-day.

BIBLIOGRAPHY.

1. Annals of Otology, Rhinology and Laryngology, Dec., 1913.
2. Annals of Otology, Rhinology and Laryngology, Dec., 1913.
3. BALLINGER: Diseases of Nose, Throat and Ear, 4th edition.
4. *Journal A. M. A.*, Vol. LVX, No. 10
5. POLITZER: Diseases of the Ear, p. 652.
6. BURGHARD'S: System of Operative Surgery, Vol. IV, p. 447.

Exchange Building.

Surgical Correction of Deformities of the Nose Without External Scarring. J. BOURGUET, *Lancet*, May 12, 1917.

Under local anesthesia Bourguet separates the skin from the underlying supporting tissues. The bone and cartilage in the superfluous segment of the nose is then removed either with a saw or with an electrically driven burr and the skin restored to contact with the improved superstructure. In completely deviated noses portions of the frontal bones are luxated, the perpendicular plate of the ethmoid fractured and the bony frame of the nose held in position by means of an intranasal splint or external apparatus. In saddle nose the author transplants a piece of tibia covered with periosteum.

Ed.

**ADHESIONS OF THE SOFT PALATE TO THE POSTERIOR
PHARYNGEAL WALL; A SUCCESSFUL SILVER
PLATE METHOD OF TREATMENT.**

DR. FRANKLIN HAZLEHURST, Baltimore, Md.

The most common cause of adhesion of the soft palate to the posterior wall of the pharynx is syphilis in the tertiary stage. Adhesion is relatively frequent in the hereditary form of lues. Rhinoscleroma, of rare occurrence in this country, is mentioned as the next most important etiological factor inducing palatal adhesions. As less frequent causes may be regarded diphtheria, lupus,¹ and pemphigus. Avellis² reported a very rare lesion due to the last mentioned disease, a palatal adhesion so near complete that only a fine canal persisted just back of the uvula. Three similar cases had been reported previously by Schroetter,³ Landgraf,⁴ and Steffan,⁵ respectively. Traumatic adhesion reported by Konig,⁶ occurred in a little girl of eight years following operation for adenoids. Monod²¹ described a case of cleft palate in a man 63 years old, in whom the two lateral parts of the palate were adherent to the posterior pharyngeal wall, and the posterior pillars of the fauces no longer visible as distinct structures. This condition he regarded as congenital.

Complete adhesion is really rare. In practically every case, there is a small residual opening connecting the naso-pharynx with the pharynx. A number of complete adhesions are, however, mentioned in the literature. Hajek⁷ reported operation upon five such cases. Foster,⁸ McDougall,⁹ Hartman,¹⁰ Roy,¹¹ Lichtwitz,¹² and a few others, reported cases of total adhesion. Cartaz,¹³ reporting on one case of his own, collected 39 from the literature. Lichtwitz, while reporting his case as one of total adhesion, admitted the presence of a small fistula. In Schroetter's statistics, quoted by Lieven,¹⁴ complete adhesion occurred in 0.3 per cent of the cases of luetic scarring.

Lieven classifies the cases according to extent of adhesion, into first grade, adhesion between the salpingo-pharyngeal fold and the posterior wall of the palato-pharyngeal arch; second grade, adhesion complete except for a perforation in place of or near the uvula; third grade, total adhesion. The soft palate may be greatly malformed. The nasopharynx may be more or less filled

with fibrous bands, which at operation are broken down or cut through with difficulty.

The symptoms are largely those of nasal obstruction, and accordingly vary in severity in proportion to the extent of the lesion. Consequently, greater or less difficulty in blowing the nose, dryness of the throat due to constant mouth-breathing, anosmia, accumulation of the secretions in the nasal passages, muffled voice, deafness, headsounds, dyspnea, night terrors, aprosexia nasalis, laryngitis, tracheitis, bronchitis may be expected as prominent features of the symptomatology.

Treatment is mainly directed, after loosening or cutting through the adhesions, toward preventing readhesion and by a few operators toward preventing in as great measure as possible further contracture of the scar tissue of the soft palates and pillars of the fauces.

Hajek advised operation under cocain anesthesia, with the line of cleavage made as close to the posterior pharyngeal wall as possible, thereby saving the greatest amount of palatal tissue. The cut was made upon a sound introduced through the nose. The operation was completed to the point of separating the fibrous strands in the nasopharynx, in several sittings, the wound being packed with gauze during the three to four day intervals between sittings. Hajek then introduced a rubber plate (first used by v. Beregszaszy), which was left in one or two days according to the sensitiveness of the patient, then removed and replaced at intervals of a day until healing occurred. Hajek states that after healing occurs, the palate should be frequently stretched by pulling upon it with a uvula hook.

Lieven proposed an ingenious method of combating, at the same time, the tendency to readhesion and contracture of the scarred tissue of the palate. This consisted in passing daily into the nasopharynx a tiny rubber bag which could be inflated through a small rubber tube lying in the nose, to any desired pressure, and left in for a varying length of time, according to the indications. This method the writer tried on a patient, a young woman with only a tiny fistula persistent between the pharynx and nasopharynx. The tip of a rubber finger was tied securely to a metal connection, a rubber catheter, passed through the nose into the pharynx, was drawn out through the mouth and slipped on the other end of the metal connection. The improvised rubber bag was pulled up into the nasopharynx by

gentle traction on the catheter, inflation accomplished, using an atomizer bulb, and a pinch-cock applied to the catheter. This treatment was used daily until the patient refused further attendance, the inflated bag being left in for several hours at a time. While feasible and attended, as far as we were able to go, with some degree of success, the method was certainly quite uncomfortable to the patient.

Several authors mention the use of hollow obturators fastened to dental plates to maintain the patency of the nasopharyngeal passage. Cardoux,¹⁵ Kuhn,¹⁶ McDougall,⁹ and Schadle¹⁷ made use of this principle. Hamilton,¹⁸ Foster,⁸ and Spencer¹⁰ employed some form of bougie.

The writer's second case had almost a total adhesion, practically preventing breathing through the normal passage, but anteriorly in the soft palate there was a perforation through which the patient got an insufficient amount of air. When this palatal perforation was occluded by a cotton plug, the patient had a disagreeable sense of suffocation. As the method of treatment described above, namely, dilatation by means of an-inflatable rubber bag in the nasopharynx, had been unpleasant to the patient, the writer desired to try in the second case to prevent readhesion, the introduction into the nasopharynx of a thin silver plate, having in mind the known bactericidal effect of silver. This should be less irritating than any other means and consequently longer borne.

At the operation done under ether anesthesia given through the Kuhn perforation intubation tube,²⁰ the palatal adhesions were cut through keeping as close to the posterior pharyngeal wall as possible, and adhesions in the nasopharynx partly cut through and partly loosened by the finger. The palatal perforation mentioned above was freshened on the edges and closed by suture. The thin silver plate was trimmed with scissors to the required size, approximately 3 cm. square, the sharp corners rounded slightly. Into one of several small holes in the plate, a silver wire was attached and the loose end of the wire then fastened to a rubber catheter passed through the nose into the mouth. Traction was then made on the catheter and with the aid of a little manipulation from the pharyngeal side, the plate drawn snugly into the nasopharynx. The wire, holding the plate in position, was fastened to the cheek by adhesive plaster.

The plate was borne by the patient without removal for eighteen days with practically no discomfort. When removed, the

patient could breathe freely through the nasal passages. This patency still persisted three years later. The patient has a nasal twang to the voice owing to the imperfect action of the scarred palate, exact approximation of the palate to the posterior pharyngeal wall not being possible.

This method is presented not as one which will restore to normal action more or less scarred palatal structures, but one which, from the standpoint of the operator, is easier of application and, from that of the patient, freer of attendant discomforts than other methods that have been used. It would seem that very little can be accomplished toward preventing further contraction of the loosened palate tissue, but the prevention of readhesion is readily assured by this method.

BIBLIOGRAPHY.

1. P. HEYMANN: *Handbuch d. Lar.* Bd. 11, S. 468.
2. AVELLIS: *Muench. Med. Wochenschr.*, 1900, xlvii, 321-323.
3. SCHROETTER: *Jahresbericht*, 1871-1873.
4. LANDGRAF: *Berliner Klin. Wochenschr.*, 1891.
5. STEFFAN: *Zehenders Monatsblatt*, 1884.
6. KOENIG: *Archiv. internat. de laryngol.*, Paris, 1909, xxvii, 898-901.
7. HAJEK: *Internat. klin. Rundschau*, Wien, 1892, vi, 1385-1388; also, *Allgemein. Wiener med. Ztg.*, 1897, xlii, 13.
8. FOSTER: *Med. and Surg. Reporter*, Phila., 1891, lxi, 385.
9. McDUGALL: *Liverpool Med. Shir. Jour.*, 1903, xxiii, 295.
10. HARTMAN: *Ztschr. f. Ohrenheil*, Wiesbaden, 1889, xx, 59.
11. ROY: *Ala. Med. Jour.*, Birmingham, 1902-1903, xv, 555-560.
12. LICHTWITZ: *Ann. d. Mal. de l'oreille, du larynx, etc.*, Paris, 1894, xx, 815.
13. CARTAZ: *Arch. internat. de laryngol.*, Paris, 1893, vi, 65-89.
14. LIEVEN: *Muench. med. Wochenschr. Mai*, 1895.
15. CARDOUX: *Ann. d. mal. de l'oreille, du larynx, etc.*, Paris, 1893, xix, 856-861.
16. KUHN: *Monatschr. f. Ohrenheil*, Berlin, 1892, xxvi, 189.
17. SCHADLE: *St. Paul Med. Jour.*, 1906, viii, 127-143.
18. HAMILTON: *Montreal Med. Jour.*, 1894-1895, xxiii, 1904.
19. SPENCER: *Journal of Laryngol.*, London, 1898, xlii, 62.
20. HAZLEHURST: *LARYNGOSCOPE*, St. Louis, November, 1913.
21. MONOD: *Mem. et bull. soc. de med. et chir. de Bordeaux*, 1887-1888, 344.

108 W. Saratoga Street.

AN INTERESTING CUT-THROAT CASE.*

DR. WILLIAM WESLEY CARTER, New York.

The patient, a man, 28 years of age, suddenly seized with suicidal mania, slashed both his wrists with a razor and then drew the blade squarely across his neck just above the upper edge of the thyroid cartilage. The hemorrhage from the wrists was severe, but was easily checked. There was only moderate bleeding from the wound in the neck, though the incision reached almost to the posterior pharyngeal wall.

The skin wounds were stitched up by a general surgeon and the man was brought to my service in Gouverneur Hospital. The case was not seen by me until forty-eight hours after the injury; at this time the following conditions were noted: The patient was breathing through a hole in the neck just above the thyroid cartilage and could not speak. A stitch had been taken in either end of the cut; this included only the skin and the important structures had not been approximated.

The cut had been made between the thyroid cartilage and the hyoid bone, severing the epiglottis at its base. On looking into the mouth the epiglottis could be seen protruding above the level of the tongue. Through the gaping wound in the neck the larynx could be unusually well demonstrated, and beyond the larynx could be seen the posterior pharyngeal wall.

Operation: Under local anesthesia the upper portion of the larynx, which had been drawn upwards about two inches, was pulled down by means of sharp hooks and held while it was being sutured into its proper position; all of the parts being carefully and accurately approximated. The wound was then packed with iodoform gauze. Healing by granulation was encouraged for about two weeks. The margins of the skin were then pulled together and sutured with horse-hair.

Both the cosmetic and functional results were perfect.

The interesting features connected with the case were:

- (1) The would-be suicide selected the exact spot where a cut can be made across the neck to a great depth without wounding any vital structures.

*Read before the New York Academy of Medicine, Section on Rhinology and Laryngology, November 16, 1916.

(2) The extraordinary manner in which the muscles attached to the hyoid bone pulled this bone and the upper portion of the larynx, including the epiglottis, up into the throat, when it was liberated by the cut from its attachments to the larynx.

(3) The remarkable picture of the larynx presented through the wound in the neck.

(4) The inability of the patient to utter a syllable until the hyoid bone and the upper portion of the larynx had been pulled down and sutured in their proper position, when articulation at once became perfect.

Later note on the case: The day before this patient was to be discharged from the hospital, he jumped out of the window and was instantly killed.

It would seem to the writer that all would-be suicides should immediately be placed in a prison ward or in an insane pavilion and kept under close observation.

69 West Fiftieth Street.

A CASE OF STAPHYLOCOCCEMIA.*

DR. WILLIAM WESLEY CARTER, New York.

This case was seen by me in consultation with Dr. C. N. B. Camac in connection with my service in Gouverneur Hospital.

Mary S., married, age 28, a native of Austria, was admitted to the hospital on October 19, 1916.

Her family history is unimportant. Her health, previous to her present illness, has been very good. She has never had any serious illness or any ailment which might throw light on her present condition. The patient has had no miscarriages. She has had two normal labors; one child is living and well; the other died at the age of one year from heart disease.

The onset of her present illness was gradual. Eighteen days before her admission to the hospital her appetite became poor, she had a cold in the head, a slight cough, severe headaches and some

*Read before the Section on Rhinology and Laryngology, New York Academy of Medicine.

fever. One week before entering the hospital she had pain in the right shoulder, and five days later pain in the left hand and wrist. She was treated by a private physician, but, becoming much worse, was brought to the hospital.

Examination of the patient on admission showed the following conditions: Patient well nourished, suffering pain in shoulder and left wrist. Slight cough; no expectoration; face flushed; temperature 104.5° ; respiration 38; pulse 130.

Pupils equal and react to light and accommodation. Tongue coated brownish, dry and cracked. Teeth decayed and gums red and swollen. Muco-purulent secretion in naso-pharynx. Tonsils negative. Nose filled with muco-purulent secretion.

Heart: Apex above normal position. Soft systolic murmur at apex, not transmitted. Pulmonic second sound accentuated.

Lungs: Diminished breath sounds over left apex. Crepitant rales in infra-scapular region on left side. Occasional sibilant rales over both lungs.

Spleen distinctly palpable. Liver and kidneys not palpable.

Fine vesicular rash over entire abdomen.

Right shoulder very tender. Left wrist swollen and painful.

Inguinal glands enlarged.

Reflexes diminished.

Laboratory reports: Urine normal. Vaginal secretion contains no gonococci. Sputum negative for tubercle bacilli. Blood: *Red cells*, 3,200,000. *Hemoglobin*, 48 per cent. *Leucocytes*, 10,200. *Polynuclears*, 83 per cent. *Large lymphocytes*, 6 per cent.; *small lymphocytes*, 6 per cent; *large mononuclears*, 2 per cent; *small mononuclears*, 3 per cent.

At end of 24 hours, blood culture shows 100 colonies per cc. of staphylococcus pyogenes aureus.

Fluid from the knee, which became involved on the second day after admission, showed on culture staphylococcus pyogenes aureus. Pus from the nose showed the same organism.

Several cultures of blood were made at intervals and in each instance there was an abundant growth of staphylococcus pyogenes aureus.

Condensed report of clinical course of disease during the eighteen days patient was in hospital under observation: Temperature fluctuated daily between 102° and 105° . The respirations and pulse were rapid, but at no time was there any marked disturbance in the

normal ratio until just before the lethal event. Lowest respiration 24 and pulse count 108; highest 60 and 132 respectively. Pulsation in the veins of the neck was marked. The skin of the face became bronzed. A petechial hemorrhage occurred in the conjunctiva and subcutaneous hemorrhages over the left malleus and right heel. The mouth and tongue were very dry and covered with sordes. The gums around the incisors were red and swollen. The tonsils were apparently normal. There was a considerable amount of pus dropping down from the naso-pharynx. Both nasal cavities were filled with muco-pus. This was removed as complete casts. The septum and turbinates were ulcerated and bled freely. On the left side especially there was a considerable amount of liquid yellow pus which was coming apparently from the ethmoid cells. Cultures made from this pus showed the staphylococcus.

The treatment was supporting, augmented by the administration of autogenous vaccines. Of the latter, three doses were given; two of 100,000,000 each on the eleventh and thirteenth day after admission; one of 200,000,000 on the seventeenth day. These were without perceptible effect.

The patient succumbed to the disease on the eighteenth day after admission and on approximately the thirty-fifth day of the disease.

The salient points in the autopsy reports are: Nose and throat filled with muco-pus. Ulceration on septum and turbinates; ethmoiditis. Pulmonary and bicuspid valves ulcerated and covered with recent vegetations. Lungs filled with small metastatic abscesses. No abscesses in any other part of the body, and no lesion in any part of the body which might have been considered a more likely portal of infection than the nose and mouth. The spleen was enlarged to five times its normal size.

Staphylococcemia is either a rare condition or it is a condition infrequently recognized. For this reason and for the reason that most likely the infection gained its entrance to the circulation through the nose or mouth, I have considered this case worthy of your attention.

In review of the comparatively few cases of staphylococcemia reported in the literature, in almost every case there is uncertainty as to the portal of infection, and it would seem to me that this would be a question practically impossible to decide unless the condition is recognized very early in its course.

A very interesting feature of this case is the involvement of the right heart (due no doubt to the infected lympho-venous return

stream), and the miliary abscesses in the lung, the infection having been distributed through the pulmonary artery.

The futility of vaccine therapy in this case is in keeping with the experience of all other observers; for no laboratory has yet produced an effective antistaphylococcus vaccine. In this instance, however, the vaccines were not given a fair trial, for the patient was not seen by us until the eighteenth day of the disease, and the culture could not be made and the vaccine prepared before the twenty-seventh day.

My experience in this case prompts me to urge that blood cultures be made as early as possible in every case where there is the slightest suspicion that the blood stream is infected. By so doing a fair verdict could be reached as to the real value of autogenous vaccines.

69 West Fiftieth Street.

Foreign Body in the Right Maxillary Antrum for Twenty-five Years Causing Nasal Neuralgia. IRWIN MOORE, Proc. Royal Med., Laryngol. Sec., Jan., 1917.

Patient, a woman, 67 years old, complaining of facial neuralgia of twenty-five years' duration. Upper molars had been removed and patient had been repeatedly treated without benefit. X-ray showed a rod-shaped body in the right maxillary antrum. Removed by operation and it was found to be a piece of pure aluminum 1.34 cm. long and weighing 3.69 grains. The case is of interest as showing that: (1) the maxillary antrum will tolerate a foreign body for 25 years without causing catarrh or suppuration; (2) the shadow of the piece of metal could be distinctly seen on transillumination of the antrum; (3) the appearance of the aluminum was not compatible with its being metal; (4) cases of facial neuralgia may be treated for years without any suspicion of being caused by antrum trouble.

Ed.

EDITORIAL DEPARTMENT

PERORAL ENDOSCOPY AND LARYNGEAL SURGERY.

EDITED BY

DR. CHEVALIER JACKSON, Philadelphia, Pa.

ANCIENT FOREIGN BODY CASES.

It is well-known that the lower animals get foreign bodies lodged in the food passages and, though less frequently, in the air passages. Hence we deduce that foreign body cases long antedated man on the earth. The earliest literary reference that the author has been able to find is the following fable attributed to Aesop:

The Foreign Body Case According to Aesop.—A wolf devoured his prey so ravenously that a bone stuck in his throat, giving him great pain. He ran howling up and down, and offered to reward handsomely anyone who would pull it out. A crane, moved by pity as well as by the prospect of the money, undertook the dangerous task. Having removed the bone, he asked for the promised reward. "Reward!" cried the wolf; "pray, you greedy fellow, what reward can you possibly require? You have had your head in my mouth, and instead of biting it off I have let you pull it out unharmed. Get away with you, and don't come again within reach of my paw." (The Wolf and the Crane. The Fables of Aesop, 600 B.C.).

It may be gathered from the foregoing that human nature has not changed much in twenty-five hundred years. But Aesop's contemporaries grew tired of hearing of their shortcomings and threw the author off a cliff into the sea. Which still further illustrates the unchangeableness of human nature.

The Case of St. Blaise.—The next mention we have found is that of St. Blaise, who lived in the reign of Diocletian (284 to 305 A.D.). This persecuting imperial fiend incarnate threw St. Blaise into prison, where he continued to heal the sick, who were brought to him. "Among these was a boy from whose throat St. Blaise plucked a thorn and saved the boy from suffocation." Then St. Blaise was beheaded by Diocletian's decree. It is small recompense that the worthy priest is still the patron saint of throats and that

special services are held for him annually on his feast day. It is interesting to note that St. Blaise was Bishop of Sebaste, a diocese of still-persecuted Armenia. Once again we have evidence of the unchangeableness of human nature.

The Case of Matthew Arnold.—In the "Light of Asia" occur the following lines:

"Then came—who knows?—some gust of jungle wind,
A stumble on the path, a taint in the tank,
A snake's nip, half a span of angry steel,
A chill, a fishbone, or a falling tile,
And life was over and the man is dead."

The question arises as to the source of Matthew Arnold's information as to the mortality attending the fishbone as a foreign body. The words are written as those of Gautama; but, of course, the writing is Arnold's. Prof. Ralph Elliott Blakeslee has given us the following note:

"It seems to me there can be small reason to believe the passage could be in the thought of Gautama, as Arnold used secondary sources for his poem, notably Spence Hardy's "Manual of Buddhism," and Samuel Beal's "Romantic History of Buddha." Arnold studied Eastern languages and mastered not only those of India but also Turkish and Persian. He translated several things from Sanskrit. Without doubt, he could have used original sources in his work with that equipment. However, there is no available record that he used any sources except the secondary ones noted."

Primary Echinococcus Disease of the Lung. G. MARIOTTI,
Policlinico, No. 3, 1917.

The lesion was in the lower lobe of the right lung and the diagnosis was confirmed by radiogram. As spontaneous cure is exceptional, the author obtained access to the lesion by resecting the seventh, eighth and ninth ribs, suturing the pleura and lung to the chest wall to prevent retraction of the lung and also outline the field of operation. It was tamponed and the skin sutured over this. No attempt was made to remove the cyst membrane in the lung, as it was adherent and fragile.

Ed.

SOCIETY PROCEEDINGS.
NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

February 28, 1917.

Report of Two Cases of Atrophic Rhinitis Treated With Ichthylol Ointment. DR. ROBERT H. FOWLER.

(To be published in a subsequent issue of THE LARYNGSCOPE.)

Fibroma of the Ethmoid Region. DR. ROBERT H. FOWLER, New York City.
(To be published in a subsequent issue of THE LARYNGSCOPE.)

DISCUSSION.

DR. DWYER said that he had seen enough of nasal fibroma to be very cautious in making a diagnosis. One need only remember the case of a young man presented before the Section a number of times by Dr. Harmon Smith, in which repeated diagnoses of fibroma were made but which finally developed into sarcoma, of which the patient finally died.

They are formed of similar tissues, and when specimens are taken from the front of the nostril one cannot be too positive in pronouncing it fibroma or sarcoma. Only in the last week Dr. MacKenty had operated upon a young man, performing a very extensive operation, for a tumor which had been diagnosed as fibroma for three years. Sections had been examined by a number of men, including Dr. Ewing, and himself, but recently it developed that the man had a rapidly growing sarcoma which had been diagnosed as fibroma.

The case reported by Dr. Fowler may possibly follow the same course, for with such an operation as was performed one cannot remove the cause, and a recurrence was to be expected. In Dr. Smith's case just referred to, the young man's nose was cleared out four or five times, but in one of the specimens decided sarcomatous tissue was found. The tissue examined in Dr. Fowler's case was taken from the front of the nose, and upon examination it looked like simple fibroma, but there was some cellular invasion, though not enough to base a diagnosis upon it. It would be interesting to see the outcome of this case, whether or not it remains quiescent. Hence, in the light of all the facts and the history of such cases we, as pathologists, do go slow in making an out and out diagnosis.

DR. FREUDENTHAL said that he had understood Dr. Fowler to say that he had cured the case of atrophic rhinitis simply by the application of ichthylol. If that is so, it was certainly a very rare occurrence, for we have all been using ichthylol for many years. Dr. Freudenthal said that he himself had been using the ichthylol recommended by a former member of the Section, applying it on tampons inserted for two or three hours. These cases improve under such treatment, but he had seldom seen a cure.

DR. HERZIG said that he had used ichthylol and several other medications, among them, 5 per cent Scarlet Red ointment. The latter, being

used as nasal tampons and being in contact with the middle turbinate tissues, he had found to be the best alternative in atrophic rhinitis and also ozena. It is not a cure; the sinuses must be taken care of when diseased, etc. The tampons medicated with the 5 per cent Scarlet Red ointment, are allowed to remain in the nose for at least one-half hour. With this treatment he has been able to keep the nose fairly clear of scabs for a great length of time and keep the patient comfortable.

DR. GUTTMAN said that he employed cotton tampons without ichthyol as the best method of relieving the foul smell in these cases. Ichthyol helps, but the cotton pledgets in themselves form the best treatment.

Three Cases of Stricture of the Esophagus, Due to Accidental Swallowing of Concentrated Lye Solutions. DR. C. J. IMPERATORI.

(To be published in a subsequent issue of THE LARYNGSCOPE.)

DISCUSSION.

DR. ARROWSMITH said that he had nothing to add to Dr. Imperatori's remarks in regard to slow dilatation. In these old cases of stricture from alkaline or acid burns he had found a very useful procedure to be the nicking of the edges of strictures which are often annular, with a little instrument which he had devised, which worked very satisfactorily. That kind of scar is so elastic and so resilient that it is difficult to get a start on it; in such cases the nicking can be done safely and is a great advantage. The object lesson which he had gotten from the specimen which he had showed last spring from a child that had come to the King's County Hospital, after having six months previously swallowed a solution of lye, by a bouginage done blindly, resulting in a small perforation and a slow infection with ultimate death, was a strong argument against blind bouginage. In another case which he had dilated at about the same time under the control of the eye, the child had done very well.

DR. MACPHERSON congratulated Dr. Imperatori upon the results obtained in these cases. It was very difficult work and the results were admirable.

Report of Acquired Pharyngeal Stenosis: Operation With Prosthesis.

DR. HARRY E. ISAACS.

(To be published in a subsequent issue of THE LARYNGSCOPE.)

DISCUSSION.

DR. COFFIN said that the case was one of an interesting class. He himself has had several such and they have given him much trouble. He then asked if he was correct in understanding Dr. Isaacs to say that he expected eventually that he could leave the instrument out. If so, Dr. Coffin disagreed, saying that those cases with a specific taint never lost the tendency to contract. The instrument seemed to be an extremely good one. Dr. Coffin then told of a patient whose case he had followed from childhood. It was undoubtedly a case of hereditary syphilis, and came under his observation when the patient was thirteen or fourteen years old. There was an ulcerative process involving all pharyngeal walls. Her father was a syphilitic. The child was put on antisyphilitic treatment. The ulcers healed; this was followed by contraction until at fifteen or sixteen years of age, there seemed to be danger not only of asphyxia but a stoppage of deglutition. She was referred to Dr. B. F.

Curtis who, at St. Luke's Hospital, made a large skin flap from the throat wall which was turned into the throat through a large incision above the hyoid bone. The skin grew in place and the girl has an opening into the esophagus and larynx which has lasted very well. The naso-pharynx absolutely closed up. The last time he saw her she had a pipe in the naso-pharynx. It was not half as large in circumference as that just shown by Dr. Isaacs, but she was able to breathe very nicely.

Some years ago Dr. Nichols, a former surgeon at the Manhattan Hospital, devised a plan of treatment which many followed for a time, of putting in a seton and letting the tissue heal about it, and then cutting from the ostra to the free border of the contracting tissue—all to no avail. Contraction took place just the same. The only thing in the specific case seems to be to resort to some such device as Dr. Isaacs had shown. The sad thing is that the more negative the blood becomes as to the specific taint, the greater the contraction.

Dr. McCULLAGH spoke of a method of operating on these cases devised by Dr. J. E. MacKenty some four to six years ago. A patient had come to the clinic with a congenital atresia so far as could be learned. There was no history of traumatism. Wassermann was negative. The opening was just large enough to pass a probe. Tongue-shaped flaps were cut on the posterior wall of the pharynx, the inner borders of which corresponded to the opening, the adhesion was separated laterally with scissors and each flap was turned up posteriorly over the cut edge. These flaps were held in place by a mattress suture which had been passed through the end of the flap, the ends of this suture being threaded through a curved needle which was passed through the soft palate and secured by shot. By this procedure there were no raw edges left. The denuded surface on the posterior pharyngeal wall healed by granulation.

For a while following the operation the girl used a dilator occasionally. Dr. McCullagh said that he had seen this patient within the last month and the nasal breathing was well established, and had remained free ever since the operation. Incidentally, it was very interesting to see the development of the turbinates after the establishment of the nasal breathing. They were very rudimentary at the time of the operation, for so far as she had known she had never had any nasal breathing. After the operation a marked hypertrophy of all the turbinates took place; she has had several turbinotomies and much removal of tissue. This patient after six years, and without any cumbersome apparatus, has perfect respiration. There is no necessity for anything except an occasional dilatation. Dr. McCullagh said that this patient had been presented before the Section by Dr. MacKenty, and was the only one which he himself had been able to follow up.

Dr. FREUDENTHAL told of a case he had had years ago which was not of specific origin—a case of total adhesion following adenectomy. He did not try slow dilatation for experience had taught him that it was of no use in such cases and that a radical operation must be done. He made a large opening and pulled the soft palate back by strings introduced through the nasal passages, leaving them in place for eight days after the cicatrization set in, and it remained open. The patient was operated upon ten or twelve years ago, is now married and has a healthy

child. This method of operation gave good results in this instance, and it was worth trying.

DR. MACPHERSON said that he had had five of these cases which he had treated with fair success. Two of them occurred in private practice, and three were clinical cases. Some years ago Dr. Harmon Smith devised a plan of putting rubber catheters through the nose and mouth, fastening them on the cheeks with adhesive plaster—putting one on each side and cutting between. At first he tried gauze, but later he found the catheters to be better. In any case, the objection is that you don't keep the catheters to the lateral walls on each side, which is the idea of the old-time seton that Dr. Coffin had referred to.

Dr. MacPherson said that it had occurred to him to put the catheters in and keep them in position by not severing the intervening fibrous neck getting the result that Dr. Nichols aimed at, leaving them in ten to twelve days, and then separating. During these ten or twelve days a certain amount of adhesion took place which prevented the cicatrization creeping in from the sides to the center. At the end of ten days the neck was cut between the catheters and the catheters pulled, pulling them a little tighter, with the object of keeping the soft palate away from the posterior wall. Three of the cases treated by this method were non-specific, two were specific. Three were due to adenoidectomy and tonsillectomy operations performed without an anesthetic and producing traumatism. Four patients are in very good condition to-day, with good breathing and drainage and are comfortable; they do not have to use any instrument. The fifth was operated upon while a + Wassermann was present and is under the care of Dr. Bruce Ferguson. I do not know the end results.

For some time after removing the catheters it was necessary to watch patients and break down adhesions if required.

Dr. MacPherson said that recently another case had come under his observation, and after talking it over with Dr. Clarence C. Rice it had been decided that in this instance instead of employing the catheters coming through the mouth and nose the operation would be modified and a short tube used, to be held in place by buttons or a knot of gauze or something that would absolutely secure it, so that it could not slip up or down, leaving that in situ for ten days, then separating the neck, but they had not thought of anything better for the succeeding ten days than the catheters which had been mentioned, for the purpose of holding the soft palate away from the posterior pharyngeal wall.

The syphilitic cases are very difficult indeed. Where there is a negative Wassermann preliminary to operation, there is a pretty good chance of preventing them from cicatrizing. Dr. Isaacs was to be congratulated on the originality shown in treating the case reported. A great many types of instruments have been devised for this condition, but this idea seemed to be more adaptable than most on account of the patient being able to insert and extract it, with the consequent liberty to leave it in situ indefinitely.

DR. HURD told of a non-specific case which he had treated some years ago, where the patient had only a very small hole that she could not breathe through. He split it so that a silver half dollar could be slipped

in, and she wore it for several months, during which time the coin kept perfectly clean.

There is always a certain amount of contraction from each side. In this instance, the silver half dollar happened to fit and did not get foul, and there was practically no danger of its slipping out. If a proper sized metal piece is fitted in it will not drop down, but some force will have to be exercised in removing it with the forceps.

Rib Transplantation for Nasal Deformity. Presented by DR. IMPERATORI for DR. SCRUTON.

(Two cases were presented, one of them being a luetic case.)

DISCUSSION.

DR. ARROWSMITH said that his experience in this work had been very limited, but that he had treated a few syphilitic cases, one of which showed a very good result.

DR. MACPHERSON said that so far as transplants are concerned, no one can say very much about the results inside of a year. The cases look very well for the first few months and may be all right, but in a year or so the bones may be absorbed. Radiographs taken during the succeeding months may show successful grafting taking place or gradual absorption.

Transillumination of the Larynx. DR. L. M. HURD.

Dr. Hurd said that this was a demonstration of a method, not of a case. Recently Dr. Spencer had sent out a circular asking about transillumination of the larynx. He himself had happened upon this method in an accidental way. While using the bronchoscope he saw the light through the skin, so he put the light on the outside and looked with the mirror through the inside. The condition presented is rather novel and peculiar, and if there is any infiltration there is a certain amount of contrast between the darker and lighter spaces, and if there is anything under one of the vocal cords you can see something darker in that part. Dr. Hurd said that he had no idea of claiming any priority in this matter over Dr. Spencer, as something of the kind had been done by Lennox Brown some 30 years ago.

DISCUSSION.

DR. FREUDENTHAL said that if any one would look up the proceedings of the Section 27 years ago it would be found that he had demonstrated this method together with transillumination of the antrum at that time. That was the first demonstration of this kind in the United States. It was in 1889 or 1890. It was not his discovery or Lennox Browne's, but was first brought to our notice by Voltolini, of Breslau. He had only modified it so that it would conform better to the formation of the larynx. The picture obtained was really beautiful. At that time it was considered important to find out whether by transillumination you could make a differential diagnosis between a malignant and a benign neoplasm, and he was able to make the diagnosis of a cyst in one instance. Dr. Spencer had sent him also a circular, and he had written to Dr. Spencer and reported this case: The man had been a patient of Dr. Asch's, then went to Dr. Lefferts, and then came to Dr. Freudenthal. The former two gentlemen had made a diagnosis of aneurysm. The patient was suffering

with a terrible stridor that could be heard nearly a block away. It is true there was some pulsation in this case; but Dr. Freudenthal said that he made a diagnosis of carcinoma and the man died not long afterward. It was then found that he had a carcinoma, below which was an aneurysm. It was an extremely interesting case.

Dr. HURD said that he had simply brought the matter up because he thought it interesting. He had picked it up independently of any one, and had not then known what Lennox Brown did years before. The picture revealed was interesting, and you could look all the way down the wind pipe, etc.

Tooth Plate Impacted in the Upper Esophagus. DR. H. ARROWSMITH, Brooklyn, N. Y.

On December 24th, 1916, I was called to see J. C., aged 40, admitted to my service at the King's County Hospital, with the history that during his Christmas celebration, commencing the previous evening, he had swallowed his tooth plate, which beside interfering considerably with his breathing, hampered him in his plans of having a "real" merry Christmas, by making it very difficult for him to swallow anything else. I found the patient quite dyspneic and in considerable pain. Being still decidedly inebriated he was not, however, sensitive, and a very little cocaine, locally applied, produced sufficient analgesia for endoscopy. The tooth plate lay diagonally antero-posteriorly. The base, concave side up, being deeper under the crico-pharyngeal constriction and the teeth impinging on the trachea, which thereby was materially obstructed. Notwithstanding its short sojourn—18 hours—there was considerable edema about the foreign body, and it was very difficult to expose and grasp the edge lying under the constriction. After vainly trying several laryngeal and esophageal specula I succeeded with a Mosher esophagoscope in exposing the upper border of the plate and removed it with alligator forceps. The patient was able to leave the hospital and resume his festivities on Christmas morning. The plate measures $1\frac{1}{2}$ by $1\frac{1}{4}$ inches, with two central incisors attached.

Dr. Arrowsmith also presented another foreign body—quite a good-sized opaque white stone—which had been removed, and read an account of it.

DISCUSSION.

Dr. IMPERATORI said that he wished to corroborate what Dr. Arrowsmith had said about the Mosher esophagoscope and doubted very much whether the object could have been removed as successfully with any other instrument. As has been pointed out by Dr. Jackson and several others, to simply grasp a foreign body and pull is the most dangerous procedure that we know of in endoscopy. The object should be manipulated so that its position will be such on withdrawal that its edges will not tear or injure the esophagus.

Undoubtedly the cessation of respiration was due to an inhibition of respiration, produced by the passage of the foreign body—when being extracted—and passing through the upper esophagus, behind the larynx. The very act of swallowing is an inhibition of respiration, and if an inhibition can be continued long enough and to this we have added the pressure on the esophageal ends of the vagus, a respiratory cessation may issue.

Dr. Imperatori said that he would not undertake to instruct Dr. Arrowsmith, who had been his teacher and guide in things endoscopic, still it would seem that the passing of a Jackson bronchoscope and attaching the oxygen tank to the special tube, which is on all these instruments, he might have avoided doing a tracheotomy.

Radiograms help considerably. Not so much in locating the foreign body, but in demonstrating its position in relation to the long axis of the esophagus. This case shows the value of the ballooning esophagoscope, particularly, when a radiogram is not available.

Dr. LAW said he would like to utter an objection to Dr. Arrowsmith's remark that he thought the x-ray would not have shown the stone. He himself believes it would.

The Roentgenogram made with the stone directly on the plate shows a dark spot surrounded by a lighter area. This means that the penetration of the ray was less in the center than around the edge, because the stone is much thicker in the center. The edge shows lighter also, because the exposure was made outside the body and possibly with a greater amount of exposure than would have been given with the stone in the body.

He was inclined to think that a plate made at the time, with the proper exposure, would have shown a clear outline of the foreign body, particularly as it was situated in a pneumatic region.

Dr. ARROWSMITH asked if Dr. Law had ever seen any picture of a stone.

Dr. LAW replied that he had not seen one of a stone of that size.

(a) Operating Window for the Mosher Esophagoscope; (b) A Laryngeal Mediator for the Patient's Use. Dr. HUBERT ARROWSMITH.

This was adapted from Dr. Yankauer's laryngeal mediator which is a most valuable aid for a patient's home treatment. Its chief drawback is the lack of durability of the rubber bulb, and as most of the medications are of oil, that is serious. Dr. Arrowsmith's device, a small asbestos-packed syringe, replaces the rubber bulb and as a modification of Dr. Yankauer's mediator it will be more durable and may work out a little better.

DISCUSSION.

Dr. IMPERATORI said that he had used the Yankauer laryngeal mediator a great deal, but thought that this modification of Dr. Arrowsmith's was an improvement. The rubber bulb on the Yankauer instrument soon gets out of order, particularly when oils are used, making it difficult to get the medicament up in the tube or getting the right amount injected in the larynx.

An Improved Krause Snare, Particularly Useful in the Removal of Posterior Tips. Dr. CHARLES J. IMPERATORI.

The modification consists in the addition of serrated edges to the end of the canula. A number of men have tried it and found that it is very satisfactory in the removal of posterior tips.

Dr. Imperatori said that he had used Dr. Mial's snare, but in his experience he had found that the tip of the turbinate was liable to slip out after it had been engaged, whereas with this instrument it stays caught, within the wire.

He thought a combination of the two instruments would certainly make an ideal one for removing the posterior ends of the inferior turbinate.

Stenosis of the Larynx Following Cut Throat. DR. A. P. VOISLAWSKY.

Mr. B. B., age 44, came to me in February complaining of great difficulty in breathing and continual hoarseness. One month previous he had been cut on the neck in the region of the thyroid cartilage with a razor. He was removed to St. Vincent's Hospital, Staten Island, where the wound was superficially sutured, resulting in primary union. After operation the patient had slight difficulty in breathing and since leaving the hospital he has been gradually getting worse.

Physical examination showed a constricting band below the vocal cords occupying the anterior third of the lumen of the larynx.

I sent the patient to St. Luke's Hospital in Dr. Delavan's service and on February 7, where, with the Lynch suspension apparatus and under local anesthesia, the fibrous band was removed. The patient was able to talk and breathe freely within a few days and presents himself this evening, seven weeks later, with a fairly good voice and no respiratory interference.

DISCUSSION.

DR. FORBES said that he would like to know the method used by Dr. Voislawsky in approaching the band, and the type of instrument employed,—the Lynch being preferable,—and whether there was any difficulty experienced in handling the instrument; also whether the bleeding was annoying.

DR. HARMON SMITH asked if he was correct in understanding that the original cut was across the thyroid cartilage, and if Dr. Voislawsky had removed the cicatricial band from below the vocal cords? If so, he did not understand why they were so much lower than where the cut was inflicted.

DR. VOISLAWSKY replied that the cut was slanting.

DR. SMITH said that these were interesting cases, although the outcome, in the majority of instances, was favorable. He had presented some years ago, a case embodying similar conditions, where an attempt at suicide had been made with a razor, leaving a permanent fistula in the thyroid cartilage and likewise severing the left vocal cord from its attachment anteriorly. He did a thyrotomy, attached the vocal cord in place and permanently closed the fistulous opening. The subsequent results were most pleasing as the patient, inside of a year, was enabled to talk so that he could be heard distinctly across a room. In the course of three years, which observation was made just recently, it was noticed that the movement of the left side was almost as free as that of the right, although the left recurrent nerve had been severed at the time of injury. His voice now is remarkably good.

DR. VOISLAWSKY said that he did not know whether it had been noticed in examining the patient that his upper incisor teeth were broken off; this made it a very easy matter to suspend him with the ordinary suspension apparatus and Lynch attachments. The larynx came into view very easily indeed, more so than in any other case he had had, except where the incisor teeth were missing. He used the straight forceps and punched away until he cut through.

DR. LYNNAH asked what was the duration of the laryngeal stenosis, and how long after the injury was the endolaryngeal operation performed.

From what he could see with the mirror the lesion involved the crico-thyroid membrane and the vocal cords were not involved. There was, however, ample room for good respiration.

DR. VOISLAWSKY replied that the cut was beneath the cords. Apparently this happened about the time of the injury and he did not come under observation until February. Dr. Voislawsky said that he had had a number of these cases, and apparently the object of the house or ambulance surgeon, when they are brought into the general hospital is to close the external wound. It is very surprising how little attention is paid to the surgery of the larynx when the patient is first seen. The band seemed to be just above where the cut was,—at an angle of about 45 degrees.

Chronic "Infiltrative" Laryngitis. DR. H. H. FORBES.

The patient, a man, 51 years of age, came to the Post-Graduate Hospital a year ago with a history of hoarseness dating back a year and a half, making a total of two and one-half years. He was a peddler and used his voice excessively. The hoarseness came on gradually, with loss of voice but no loss of weight, and his general health did not suffer. A year and eight months ago he went to one of the hospitals in Brooklyn; his blood was examined; report, negative; a portion of the growth in the larynx was removed, and reported by pathologist to be a chronic inflammatory process.

After his admission to the dispensary of the Post-Graduate Hospital, local applications were made, and his blood was examined twice; reports were negative, but he was put upon mixed treatment with no improvement. Four months ago, under suspension laryngoscopy, a portion of the growth was removed from the inter-arytenoid region, sufficient to include in its margin normal tissue, for comparison. The pathologist reported a chronic inflammatory process. Since then the patient's voice improved considerably, but within the last ten days the picture has changed entirely and instead of having a simple chronic infiltration there is now an ulcerated area in the upper part of the glottis. Dr. Macpherson suggested that another Wassermann test be made, and the report received in the afternoon was that it was negative. This is probably the fifth blood examination that has been made. The question of tuberculosis was considered, but the medical men reported the case negative. No x-ray had yet been made. The case was printed on the program "for diagnosis" and that has not yet been determined definitely, but within the last two weeks, the additional element of ulceration of the epiglottis has appeared. So far as known, the patient has had no other treatment at any other hospital, nor has he been suspended within the last two months, so there was no reason to suspect a trauma as the cause of the epiglottic condition.

In reply to an inquiry as to whether the sputum had been examined, Dr. Forbes replied that it had, and the report was negative.

DISCUSSION.

DR. HARMON SMITH said he saw no reason for classifying these ulcerative cases as either tuberculous, syphilitic or malignant. There is no reason why there should not be simple ulcerative conditions in the larynx as upon other mucous membranes. The patient has had no pain, no tem-

perature, no indications of syphilis, and it seemed reasonable to suppose that he might have an infiltration from an overworked larynx, or it might result from some hyperacidity or acidosis. We are too prone to classify all laryngeal involvement in one of the three classes mentioned, which would not necessarily be done were the lesion in some other part of the respiratory tract.

DR. ERNST DANZIGER asked Dr. Smith how many cases he had seen that he could not classify under one of these three classes.

DR. SMITH replied that he had seen many, which had been confirmed by other diagnosticians and that it was time some one should establish the fact that not all such lesions necessarily come within one of these three classes mentioned.

DR. DANZIGER said that a negative Wassermann does not necessarily exclude syphilis. Only recently he had seen such a case. It is not sufficient to make the blood test in these doubtful cases; in some cases a spinal puncture will help out, but the blood alone does not exclude syphilis.

DR. CARTER cited a case to illustrate the principle that it might be a simple ulceration. His patient was a young man who had been seen by a distinguished specialist in Cincinnati, who had referred him for observation, saying that the condition was probably either tuberculous, syphilitic, or malignant, but as the patient was a traveling man he had not had time to make the diagnosis. Dr. Carter said that he advised his patient to rest his voice completely for ten days, using simple applications of argyrol, and that the ulceration practically healed up inside of two weeks.

DR. MACPHERSON said that Dr. Smith had suggested the diagnosis of scleroma.

DR. SMITH said that as the patient had come from Southern Russia, it should unquestionably be considered as a possible diagnosis.

DR. FORBES said that scleroma had been excluded.

Hematoma of the Pharynx Following Operation. DR. M. F. JONES (by invitation).

The patient was operated upon for goitre at the Nose and Throat Department of the Post-Graduate Hospital on January 24. The next day Dr. Jones was called to see the patient, and found him suffering with obstructed breathing; the tissues of the throat were edematous, but there was no discoloration. The edema prevented a good view of the cords, but the left cord was visible. The trachea was pushed to the left, and most of the mass was to the right. The patient was in a serious condition from dyspnea, and in this state it was a question as to whether it was best to put in a laryngeal tube or to do a tracheotomy. Intubation was ruled out on the ground that it would not help the edematous tissue high up in the throat. Tracheotomy was a last resort, as the tissues were swollen and of course, right after the operation, were filled with blood. The patient was therefore put under treatment with a tracheotomy set by the bedside in case of necessity. He was treated with inhalation of tincture of benzoin and an ice coll. After fifteen minutes, the inhalations were discontinued; and at the end of two hours the ice coll seemed to have re-

lieved the condition considerably. In the morning of the 26th, he was much better.

In the afternoon of the 28th, when seen with Dr. Macpherson, there was visible a distinct hematoma, and the swelling was discolored posteriorly. The chest and neck behind the ear showed a large hematoma, which extended down as far as the umbilicus, being higher on the right side than on the left.

The patient left the hospital in about two weeks, and returns to-night with somewhat questionable findings; probably the right cord would be found to be in the cadaveric position, and the other one movable, although slightly impaired. The right ventricle was enlarged and so also is the right arytenoid.

DISCUSSION.

DR. MACPHERSON said that he saw the case in the wards and the question arose, what should be done to relieve the dyspnea? There was marked dyspnea, and a tremendous hematoma. The question was whether to open the hematoma pressing against the larynx which was causing the dyspnea and endangering the life of the patient. It was finally decided to watch him carefully and endeavor to avoid operation and probable infection. It was a matter of watching the patient very closely and being ready at a moment's notice to perform a low tracheotomy or if necessary to open the tumor. The oozing gradually stopped and the dyspnea subsided.

Lupus of the Larynx. DR. J. J. KING.

L. W., age 15 years, was referred to me by Dr. Virgil P. Gibney, on March 9, 1917, with the history of loss of voice, following a cold three years ago. As you see, he is a well nourished youth, in apparently good health.

His mother says he had a cold three weeks ago and then his voice gradually disappeared. He cannot speak above a low whisper. His general condition is good and he has been increasing in weight. He has no pain in his throat, either upon eating or swallowing or at other times. His appetite has always been good and he has no fever.

His father and mother and two brothers and two sisters are alive and well. One brother died four years ago of tubercular meningitis.

The examination of his chest is negative for clinical signs of tuberculosis. Several Wassermann tests have been negative.

The x-ray report of his chest, made by Dr. Darling, is as follows:

In the left lung, running from the root of the upper lobe towards the second to the fourth ribs posteriorly, a fan shaped area of cloudy appearance, strongly suggesting tuberculosis. Extending from the root of the lung downward, in the region of the third and fourth ribs anteriorly, is a diffused area about the size of a half dollar, strongly suggesting tubercular involvement.

In the right lung, extending from the root of the lung towards the third to the fifth ribs posteriorly, is a fan shaped area with present or past tubercular involvement.

None of the areas in question are easy to make out, but the more the chest is studied, the more convinced I am that he has definitely tubercular lungs, the left lung showing the most amount of involvement. At the root

of this lung, there is some small, irregular calcification, which bears out the involvement towards the periphery.

The examination of his larynx shows a slight area of inactive or healed ulceration of the upper left side of the epiglottis, a very large mass of infiltration on the right false vocal cords and in the interarytenoid space.

It seems to me that this is a typical case of lupus, with its history of loss of voice and no other signs or symptoms. I do not feel justified in making a diagnosis of tuberculosis from the few suggestive signs as shown by the x-ray examination, and Dr. Darling is also unwilling to make such the lungs to be co-existent with lupus of the larynx.

a diagnosis from his plates. It is, however, possible for tuberculosis of

DISCUSSION.

DR. HURD said that the more larynges one sees the less he feels he knows about them. He did not think that this child could have tuberculosis of the larynx and be in such excellent physical condition. Syphilis would probably account for the condition, and is the most frequent cause of these infiltrations of the larynx; it will attack and destroy a part of the epiglottis. He was strongly inclined to think that the infiltration in the larynx was a syphilitic granuloma, notwithstanding the negative Wassermann.

DR. FREUDENTHAL said that he had made only a superficial examination of the case, but that he would advise taking out a piece of the tissue and having it examined. It might after all be tuberculosis, for he had seen three or four cases in which the epiglottis was eaten away just as in a specific case, and after all it proved to be tuberculosis. This may prove to be a similar case.

DR. HURD asked if the epiglottis was healed while the rest of the larynx was active?

DR. SMITH said that he had seen some cases in the Loomis Sanatorium while there as an interne, where the condition of the larynx was similar to this case, likewise spots in the lungs, as shown in the x-ray just as in this case, and there was absence of pain, just as in this instance. Where the cartilage is involved there is apt to be pain. Dr. Smith said that he was inclined to think the case was lupus rather than tuberculosis. The boy might have healed areas of tuberculosis in the lungs and still have lupus of the larynx. As long as the case had taken such good care of itself, he would be inclined to leave it alone, except the administration of nourishing diet and general hygiene.

DR. CARTER said that last fall he had shown a case at a meeting of the section in which two-thirds of the epiglottis had been entirely destroyed by tuberculosis. The margin of the destroyed portion had healed; at the same time there was an active process going on in the larynx and in the lungs. It was strongly probable that this patient had died within the last few months, for he was in very bad shape when last seen in the clinic at Gouverneur's Hospital.

DR. LYNCH supported Dr. Hurd's opinion that the condition was specific, and said he thought it was a case of the so-called condylomata, which are seen frequently on other mucous membranes than in the larynx.

